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HEREDITARY HEMORRHAGIC TELANGIECTASIA

With a Report of Five Cases in Two Families

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THE condition which is the subject of this paper has become well established through the writings of numerous investigators, notably in recent years through the publications of Goldstein and Fitzhugh. Although it is well known to students of the hemorrhagic diseases, yet, if our limited experience is any criterion, the profession at large seems hardly aware of the existence of the disease. The cases are usually confused with hemophilia or with hemorrhagic purpura. It is for the purpose of calling attention to the condition and recording five new cases in two families that this paper is presented.

CASE I. D. F., a Jewish woman of 55, married, was referred to one of us in 1929 by Dr. Cadis Phipps.

Family History. She knew nothing of her father's medical history. Her mother suffered from frequent nosebleeds and died of cancer of the lip. Her sister's case is described below (Case II). There were several half-brothers and half-sisters, all, so far as the patient knew, healthy, but one of her sons was said to be subject to recurring epistaxis.

Personal History. Deafness began about 1900 and has been progressive. She knew that her blood-pressure had been high for several years. She began to have nosebleeds about 1915, attacks occurring approximately once a month, not related to the catamenia. Subsequently she began to have hemorrhages from the gums and tongue, but never from the fingers or from telangiectatic spots elsewhere on the skin, and never from the bowel. Vaginal applications, which have been required from time to time, have usually produced a little bleeding. Minor cuts and wounds have not bled unduly. Early in 1929 she began to notice increasing pallor, and, at the time of her first visit, her complaints were dyspnea, headaches, and general pruritus.

Physical Examination. She was short, fat, and almost totally deaf, pale with a distinctly yellow tinge. The tongue was not atrophic. Its anterior third presented numerous reddish, slightly elevated patches, apparently angiomatous, averaging about 3/16 inch in diameter. Similar areas were seen on the visible part of the anterior nasal septum. There were a few telangiectases on the chest. The tips of all the fingers showed numerous lesions of the same sort, first noticed in 1928.

The radial arteries were somewhat tortuous, the blood pressure 160 systolic, 90 diastolic. The heart was normal, except for a short systolic murmur at the apex. The patient was somewhat round-shouldered and the anteroposterior diameter of the chest was relatively increased, but the lungs were normal. Neither liver nor spleen was palpable, and nothing abnormal could be felt in the abdomen. The knee jerks were normal and there was no edema.

The nose and throat were examined by Dr. H. A. Barnes, who found a number of lesions on the nasal

CASE I.

septum and lower turbinates, similar to those on the tongue and finger-tips. They were distinctly vascular, but did not bleed easily. The middle meatus was free from them. There was a polypoid middle turbinate on either side and the mucosa was pale. In view of the number of lesions, cauterization was not advised. The eardrums were normal.

X-ray studies of the gastro-intestinal tract showed nothing abnormal.

The blood on March 28, 1929, was as follows:

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hemoglobin 40% (Sahli), red corpuscles 3,820,000, white corpuscles 8,700, platelets 368,000, icterus index 2, volume index (capillary blood, spontaneous sedimentation) 0.64, reticulocytes 1.8%. A differential count of 100 leucocytes showed polymorphonuclear neutrophiles 72%, lymphocytes 20%, monocytes 4%, eosinophiles 4%. On smears no erythroblasts were seen; there was moderate achromia, slight anisocytosis, moderate poikilocytosis, no polychromatophilia or stippling. The red corpuscles seemed rather uniformly small. Platelets were about normal in number and appearance. The bleeding-time was two minutes, coagulation-time (Brodie-Russell method, capillary blood) was seven minutes.

The stool, on a hemoglobin-free diet, showed occult blood on each of two tests by the benzidine method. Microscopically these stools were normal and showed no muscle-fibre.

The urine was always normal except for constantly low specific gravity and the slightest possible trace of albumin.

Subsequent History. When last seen, in April, 1932, the patient had been well enough to continue to do a certain amount of her housework in spite of the periodic recurrence of epistaxis. Recently there had been some tendency to bleed from the lesions on the fingers, even from such slight trauma as shaking hands. The spots on the fingers and tongue were somewhat more numerous. The hemoglobin was 86% (Sahli) and the red corpuscles 4,904,000.

Treatment. The anemia, so marked at the first observation, yielded promptly to iron in large doses (iron and ammonium citrate, 6 gms. daily). Repetition of the same treatment, as needed from time to time, had kept her in very good condition. Familiarity seemed to have bred such contempt for the nosebleeds that she would not for a moment consider local treatment of the lesions.

CASE II. C. F., a Jewish woman of 51, married, was first seen in December, 1929, and sent to the Boston City Hospital. She is a sister of Case I, and the mother of Case III. She has two sons, one of whom is said to suffer from nosebleed.

Personal History. As long as she could remember she had been subject to hemorrhages from the nose, mostly from the left nostril. With the passage of years there had been a distinct tendency for the attacks to increase in frequency if not in severity. For years preceding admission seldom a day passed without some bleeding, and for several weeks it had been almost continuous. There was no story of bleeding from other sites, internal or external, nor of any undue bleeding from minor cuts and wounds.

She came to America from Russia about 1895 and considered herself perfectly well till about 1910 when she had a "nervous breakdown". "Drooping of the eyelids" was noted about this time, and an effort was made to correct it by operation. Later an intranasal operation was attended with alarming hemorrhage. The records of the Massachusetts Eye and Ear Infirmary show that she entered that hospital in April, 1915, at which time she already had complete bilateral exophthalmoplegia. There is no note of anything resembling retinal telangiectasia. The spinal fluid was normal, as was the Wassermann reaction, and no cause for the condition was made out.

Physical Examination showed moderate pallor, without yellowness or other distinctive tinge. The pulse was 94, the blood pressure 120/65. The pupils reacted to light. The heart was somewhat enlarged to percussion, regular, with a loud, rough systolic murmur both at apex and base. There were numerous râles at the bases of both lungs. The abdomen and abdominal viscera were normal.

On the anterior third of the dorsum of the tongue there were a number of small telangiectases. On the skin of the chest and abdomen there were a number of lesions similar in appearance but larger in size. There were none on the fingers at this time. The nasal septum showed no definite telangiectases, but there were "prominent venous capillaries in Kieselbach's area" (Dr. L. M. Freedman). The eyes showed complete, bilateral ophthalmoplegia externa, with considerable lagophthalmos on both sides, probably due to ptosis correction; chronic exposure keratitis and a small ectasia of the right cornea.

The blood was as follows: hemoglobin 37% (Sahli), red corpuscles 1,940,000, white corpuscles 6,450, platelets 80,000, reticulocytes 4.6%, icterus index 6, mean diameter of erythrocytes by eriometer 7.3 microns. A differential count of 100 leucocytes showed polymorphonuclear neutrophiles 83%, lymphocytes 9%, monocytes 3%, eosinophiles 3%, mast cells 1%, metamyelocytes 1%. During this count one normoblast was seen. Achromia, anisocytosis, and poikilocytosis were well-marked. Platelets were apparently decreased.

Lumbar puncture: fluid clear, possibly slightly yellow. O.P. 173; R.J. 210; L.J. 250; B.J. 260. Wassermann negative. Pandy suggestive. Cells 4.

Kahn reaction negative.

Subsequent History. During the six weeks of her stay in the hospital there was only one slight nosebleed. Under large doses of iron there was a reticulocyte response of 7.4 per cent and a rise of hemoglobin and red cells to 73 per cent and 4,300,000, respectively.

She was seen again in April, 1931, because of continued hemorrhages from the nose and occasionally from the tongue. The lesions on the tongue were about as before, but, for the first time, several faint red spots were visible under the skin of the fingertips. The external eye muscles were the same, and the heart had not changed. She was again very pale, hemoglobin 46 per cent. At this time there was no thrombocytopenia. Under rest in bed and large doses of iron, the usual improvement occurred. She is still living and still bleeding, but is said to be in fairly good condition.

CASE III. R. F., a daughter of Case II, was studied briefly in April, 1931. She was an unmarried Jewish woman of 30. She had always been well and strong, except that she had acne and said that she suffered from urticaria after eating apples or tomatoes. Her nose bled occasionally, but not frequently or severely enough to cause comment or inconvenience. Her general appearance was that of good health. She was not at all pale and physical examination disclosed nothing abnormal except a moderate degree of acne and many small telangiectases on the tongue.

CASE IV. E. C., aged 50, an American widow of French-Canadian ancestry, was first seen in April, 1931, on the service of Dr. John A. Foley, at the Boston City Hospital.

Family History. No information could be obtained concerning her parents. She had one sister about whom she could give no information, and two daughters, one of whom was said to be well and the other (Case V) probably affected.

Personal History. For years the patient had suffered from nosebleed, and occasionally bled from a spot on the right forefinger. For some eighteen months she had been getting progressively weaker and paler. She "felt the cold" in winter and had to wear more clothing than formerly.

Physical Examination. She was a tall, thin woman, moderately pale, with a peculiar sour-dough tinge. She was bright and intelligent and the facies did not suggest myxedema. The thyroid was normal

on palpation. Except for a systolic murmur at the cardiac apex there was nothing abnormal in the chest or abdomen.

On the anterior part of the tongue there was a telangiectasis as large as a pea, and numerous small ones. Similar spots appeared on the visible part of the nasal septum, especially on the left. There were many lesions on the fingertips, especially on the palmar side, but there were a few on the dorsae and under the nails. On the trunk they were large and numerous, both on the abdomen and on the chest. On the forehead there was a bluish area about a quarter of an inch in diameter, probably angiomatous. There was some scarring about it, which accorded with her story that it followed a slight wound.

This patient, like the others, said that she did not bleed unduly from ordinary minor cuts; but any injury to the lesions on the fingers did cause severe bleeding, difficult to control. She pointed out one particularly prominent lesion on a fingertip which was especially troublesome as it bled at the slightest injury, sometimes it "spurted".

The blood was as follows: hemoglobin 40 per cent. (Sahli), red corpuscles 2,030,000, leucocytes 6,450, platelets 116,000, icterus index 4, mean diameter of erythrocytes by eriometer 7.7 microns. Bleeding time 1 minute. Coagulation time (capillary) 6 minutes. The differential count of leucocytes was normal. Achromia, anisocytosis, and poikilocytosis were marked.

Basal metabolism was tested twice, the results being *minus* 16 and *minus* 21 per cent.

CASE V. An unmarried daughter of Case IV presented herself at the clinic at our request, but permitted only a partial examination. She was said to suffer from frequent nosebleeds. There were from eight to ten elevated spots on the tongue; they resembled papillae, but were dark in color and were probably telangiectatic. The nasal septum was clear, but on the right middle turbinate there were numerous dark red spots, probably also telangiectases. There were none on the fingers, but there were a few on the neck.

The lesions, in the disease under consideration, are quite similar in appearance to those seen so commonly on the skin of normal individuals, particularly in persons of advancing years. A few histological studies are recorded. Arrak, Hanes, and Steiner have observed the extreme thinness of the walls of the vessels involved. They consist merely of a layer of endothelium and lie immediately below the greatly attenuated epidermis. This extreme thinness of the vascular channels is perhaps one reason why the lesions in the hereditary disease are so much more prone to bleed than those of similar gross appearance occurring in normal persons.

The distribution of the lesions in the cases herewith reported corresponds in a general way with those reported by other authors. In every case they were present on the tongue and in the nose. There was no especial predilection for the skin of the face as has been so often described, and where lesions occurred in this location, or on the trunk, there was no marked tendency for them to bleed. Lesions on the finger tips occurred in all three of the older patients, and, judging from our small experience, this would seem to be quite characteristic in the more advanced stages. The finger tip is not a locality prone to bear telangiectases in normal individuals.

As regards the occurrence of lesions in the internal organs: various writers have described vascular nevi in the respiratory, digestive, urinary, and genital passages, as well as in the liver and other solid organs. Reference may be made to the very early case of Ullman. Jaffé has reported a similar case in a child and he refers to many other recorded instances of blood-vessel tumors in various combinations of internal and external sites. Quite recently Goldstein has exhaustively reviewed the literature. A study of many of the original articles referred to by these writers makes it evident that many of the cases were not of the hereditary type which is the subject of this paper, and in few of those which are clearly of this type is there good evidence that the rectal and other internal hemorrhages were in fact due to bleeding from telangiectatic lesions. For example, Boston has recorded three cases of recurrent bleeding from the stomach and rectum in patients showing telangiectases and having relatives who suffered from recurrent hemorrhage from various sites. One must regard these cases with suspicion, however, for neither the presence of a few nevi on the skin of the patient, nor a story of such common occurrences as nosebleed, hemoptysis, rectal bleeding or cerebral shock in his aunt or his grandfather can be accept l as evidence of the disease under consideration.

Cases of undoubted family telangiectasia have, however, been reported in which bleeding has occurred as low down in the air passages as the larynx (Kofler). Osler described a typical case in a man who died of cancer of the stomach; at autopsy the stomach showed numerous telangiectases. It may be inferred that involvement of such organs does occur, though it is doubtless much rarer than a casual study of the literature would indicate. It is possible that in the future a better understanding of the underlying nature of the disease may justify the inclusion of such cases as those of recurrent hemoptysis (Libman and Ottenberg) or of family hematuria (Guthrie). The case of hematuria described by Foggie can scarcely be doubted. At present, however, it seems best to limit the acceptance of telangiectasia as a cause of internal bleeding to cases in which the lesions have actually been seen during life or at autopsy.

The association of abnormalities of the cutaneous vessels with similar or comparable abnormalities of the central nervous system has been noted by several writers (Cushing, Kufs, Yakovlev and Guthrie). Cobb has reported a case in which a nevus occurred on the skin in the same metamere as an angioma of the spinal cord: "that is to say, the membranes of the spinal cord in the vicinity of the tumor are supplied by the same nerve roots as the

skin in which the nevi are found". Canale has, more recently, attributed similar significance to cutaneous telangiectases. Again the cases referred to by these writers are clearly not of the hereditary hemorrhagic type. Goldstein refers to a case in one of his families, where a shock with resulting hemiplegia was attributed to a defect in the small vessels presumably of an angiomatous nature, but presents no evidence in support of this assumption. Our Case II has had complete bilateral paralysis of the external ocular muscles for 25 years; unchanged for at least 17 years. The most probable explanation would seem to be a benign, non-progressive tumor in the mid-brain, a common site of angiomata. If the ophthalmoplegia is due to hemangioma of the mid-brain, it is perhaps unique in that it is associated with a clearly hereditary form of telangiectasia. But the evidence that the lesion is, in fact, an angioma is as imperfect as in the other cases to which we have referred.

The hereditary feature is conspicuous. In the literature there are recorded several families in which the disease has occurred in five generations. The inherited factor is pretty generally considered a simple dominant one (Gossage, Henle). It is not, as in hemophilia, sex-linked. It is, therefore, transmitted by both sexes directly to both sons and daughters. Such dominant inheritance, however, does not admit of atavistic skipping, which, according to Fitzhugh, has occurred seven times in 212 cases. Schoen suggests that the apparently healthy individual who transmits the trait to his offspring may, nevertheless, himself have the disease in a mild or abortive form. He may perhaps have unnoticed lesions in the nose or elsewhere, without having hemorrhages of such frequency or severity as to call them to attention. It would certainly seem likely that in a rare condition where urgent manifestations are often deferred till late in life, its existence would occasionally be overlooked or mistakenly attributed to some other cause. Present evidence does not necessitate the abandonment of the view of transmission through a simple dominant factor.

Fitzhugh reports three cases, clearly hereditary hemorrhagic telangiectasis, associated with splenic enlargement. All were in transfusion group IV and all showed increasing intolerance to transfusion; one died of toxic hepatitis after her third transfusion. Schoen and Goldstein mention similar instances. Three of our cases were grouped; there was one in Group I, one in Group II, and one in Group IV. None had any palpable enlargement of the spleen or liver. None were transfused. Fitzhugh's cases, then, seem to form a group apart from the ordinary type. As a practical matter it would seem well to bear in mind the especial danger of reactions, when called upon to transfuse patients with this condition, should they have enlarged spleens and fall into transfusion group IV.

In childhood the telangiectases are not usually present, or if present they are not detected. Nevertheless hemorrhages, particularly from the nose, may occur in early life, antedating by many years the appearance of visible lesions. The latter are apt to become obvious at about the age of 20. As years go on, they become more and more abundant and the bleeding more severe. The characteristic anemia commonly becomes serious in the late forties and fifties. In the five cases herewith reported, it will be noticed that only the parents considered themselves ill enough to apply for relief; lesions were found in the children, who considered themselves perfectly well, only when they were especially sought for.

Of course the presence of an occasional telangiectasis on the skin of the face or chest does not warrant a diagnosis of this condition. Nearly every one has a few of them. Usually they are located where there is little likelihood of injury, but when cut in shaving or by some other minor accident, they bleed as embarrassingly in normal individuals as they do in the cases here presented. Apparently the individual lesions in those subject to the hereditary disease are much the same as those found in normal persons. They become serious only because of their abundance, their occurrence in areas subject to moisture and maceration, like the mucous membranes, or to trauma, like the finger tips, and perhaps because they are occasionally accompanied by angiomas of the brain and other internal organs. In the latter situations they could produce symptoms of varying degrees of seriousness, either from pressure or from hemorrhage.

This purely mechanistic view as to the relationship between the telangiectases and the hemorrhage is not universal. Certain writers believe that there is an underlying dyscrasia, presumably hemorrhagic, to which the vascular lesions may be attributed. Steiner apparently believes that hemorrhages frequently precede the appearance of the spots and have something to do with their production. This situation is not unique. In purpura fulminans definite injury to the capillary wall has been demonstrated, together with marked thrombocytopenia. It has been shown that in endothelial tumors vascular endothelium and reticulo-endothelium are interchangeable tissues, presumably modifications of a common embryonic tissue induced by differences in environment (Piney). If this concept is true it is conceivable that a pathologic condition involving one might include the other, the vascular endothelium on the one hand and the blood-forming organs on the other. Hanes calls attention to the fact that lesions are most abundant at points most subject to repeated slight traumata, an observation with which the

writers' experience is in accord, since all of our cases had lesions in the mouth, and all of the older ones had them on the finger tips. In Case IV a lesion on the forehead definitely followed injury. These facts, as well as the recently reported cases of Fitzhugh, a supporter of the mechanistic view, in which there were untoward transfusion reactions, seem to indicate that the hereditary taint is something more than a mere congenital anomaly of the blood-vessels.

The diagnosis would appear to present little difficulty, since the lesions are superficial and easily recognized by the eye. Yet the disease has been mistaken repeatedly for purpura hemorrhagica and for hemophilia. The differentiation, however difficult it may have been a generation ago, should be easy now since, in telangiectasia, wounds of unaffected skin areas do not bleed unduly, platelets are present in normal numbers, and neither coagulation time nor bleeding time is prolonged. It is not always easy to distinguish a small telangiectasis on the skin from a minute purpuric hemorrhage, but, as a rule, the brighter color, the tendency to be slightly raised and to fade partially on firm pressure will settle the matter. Telangiectases are, moreover, commonly most abundant on the face, neck, or trunk, while purpuric spots are more widely scattered, and are usually most abundant on dependent parts. Finally, telangiectases are permanent, while individual petechiae endure but a few days.

The principal diagnostic difficulty seems to lie in the matter of definition. One can scarcely dip into the literature of these blood-vessel anomalies without soon realizing that angiomas and telangiectases occur in many different conditions, which have received different names from different writers. The relationships between these disease conditions are most doubtful and confusing. Goldstein appears to adopt a broad definition and to include under "hereditary epistaxis" and "heredo-familial angiomatosis" not only cases like those described in this report, but many others characterized by bleeding from proved or unproved telangiectatic or angiomatous lesions. In our opinion it is wiser, for the present, to limit the definition of hereditary hemorrhagic telangiectasis to cases presenting (1) definite heredity, (2) visible telangiectases in numbers and distribution distinctly pathologic, and (3) a tendency to bleed from the lesions.

As regards prognosis, enough has been said to justify the statement that involvement of the internal organs and central nervous system is at least so rare that the danger from lesions in these areas may commonly be ignored. Far the most frequent source of incapacity is bleeding, especially from the nose and mouth. Not many patients die from the resulting anemia, about four per cent according to Fitzhugh. A large proportion are more or less continuously disabled, however, particularly after the age of about 50.

Treatment is not very satisfactory. The advice usually given is to cauterize the spots in the nose, painstakingly and only a few at a sitting. We have found it difficult to convince several excellent rhinologists of the practicability of this course. Radiation has also been suggested, but the radiologists seem as reluctant as the rhinologists. Perhaps the best course to pursue is to treat the bleeding spots locally as the hemorrhages occur and to leave strictly alone those that do not bleed. Such a course would appear justifiable in view of the fact that most of our patients have been quite emphatic in stating that hemorrhages from telangiectases in visible areas, such as the fingers, occur always from the same spots. Case IV says: "Only this one bleeds, the others never do." Major operations on the nose are certainly to be avoided.

Thus far none of our cases have reached a point where local operative treatment has become imperative. Although, as the blood figures show, some of them have reached a high degree of anemia, yet, so far, in every case, a period of rest in bed has led to a prompt and marked decrease in the frequency and severity of the hemorrhages. Iron in large doses (6 gms. daily of iron and ammonium citrate) has resulted in rapid improvement of the anemia. Case II, after having been lost sight of for over a year, was treated as an office patient, and allowed to continue her usual pursuits, the only treatment being iron, as described. In spite of this seeming neglect she has steadily improved; not only has the anemia nearly disappeared, but the hemorrhages have nearly ceased.

Summary. Five typical cases of hereditary hemorrhagic telangiectasia are reported. They occur in two families and show the classic picture: (1) definite heredity; (2) visible telangiectases in numbers and distribution distinctly pathologic, and (3) a tendency to bleed from such lesions.

One of the patients presented a complete, bilateral ophthalmoplegia externa, possibly due to angioma of the midbrain. That such was the true explanation was not proved, however, and a study of the literature gives little reason for believing that either the central nervous system or the internal organs of the thorax or abdomen are frequently involved.

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REPORT ON UNDERGRADUATE TEACHING OF SURGERY

BY ELLIOTT C. CUTLER, M.D.*

IN January of 1932 the Board of Regents of the American College of Surgeons appointed a committee to study the teaching of surgery. The members with their special assignments were originally as follows:

Elliott C. Cutler	Undergraduate Teaching
George J. Heuer	Graduate Teaching
Allen O. Whipple	Postgraduate Teaching
Irving S. Cutter, Fred C. Zapffe, Chairman	Educational features of the work

Later Dr. Alexander R. Munroe of the University of Alberta was added to the Committee to cover largely the field of licensure. The Committee made a preliminary report at the St. Louis Congress in October, 1932. Individual members of the Committee have been requested by the College to publish in journals other than the formal organ of the College these preliminary reports which will contain a summary of the work as a whole in order that the work of the Committee may be more generally disseminated throughout the country. The Committee is to go on with its work and perhaps within another year can bring more formal recommendations to authorities.

As a preliminary study, a questionnaire was sent out by me, covering matters dealing with the undergraduate education of students in departments of surgery. The questionnaire was as follows:

A. What are the important matters to teach the undergraduate medical student? (Comments here on over- or underemphasis of specialties would strongly apply.)

B. What is the order of teaching (by topics in years)?

C. How much time in general is required in the curriculum?

D. We would in particular like specific answers to the following questions:

1. What do you consider the most important matters for a department of surgery to give to *undergraduate* medical students?
2. Do you consider it your duty to teach practical operative surgery?
3. Do you teach sufficiently well and do you have time and materials enough in your curriculum to satisfy yourself that you are covering carefully the following:
   a. the care of trauma, including fractures;
   b. the care of ordinary sepsis; and
   c. the giving of anesthetics?

In the following report is summarized the material collected in response to the questionnaire. It should be understood that this is purely a preliminary report and disseminated largely so that people who may have further questionnaires will perhaps take a greater interest in assisting in the accuracy with which this work is carried out. There can be no doubt but that the present tendency for the young graduates of a school to go out and practice surgery, is dangerous for the community. In fact, it is so dangerous that it seems wise to find some method by which we can require of people who are to practice surgery a further definite period of training before the authorities will permit them to indulge in this special form of medical therapy.

Question A. "What are the important matters to teach the undergraduate medical student?" There were thirty-five reliable answers. The table below visualizes the expressions numerically.

Keep specialties in the background	21
Surgical diagnosis	20
The principles of surgery	18
The basic courses	9
Clinical surgery	8
Trauma and sepsis	7
The indications for surgery	4

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Preoperative and postoperative care	4
Ambulatory surgery	1

Comment: It is obvious from the above table that most surgeons emphasize surgical diagnosis and the principles of surgery. Almost no surgeons suggested the teaching of operative surgery, which is in contradiction to the teaching two decades ago.

A further suggestion of importance as relates to this question was the definite demand by twenty-one professors of surgery that the *teaching of the specialties be kept in the background.*

Question B. "What is the order of teaching (by topics in years)? The table below indicates the numerical responses.

First year	
Physiology	1
Biological chemistry	1
Neuroanatomy	1
Histology	1
Dissection	1
Minor surgery	1
Surgical amphitheatre clinics	1
Second year	
Principles of surgery	14
Minor surgery	8
Basic sciences	6
Surgical lectures	4
Physical diagnosis	3
Surgical anatomy	3
Clinical teaching	3
Dry clinics	3
History of surgery	1
Medicine	1
Fractures I	1
Third year	
Didactic course in surgery	12
Principles of surgery	10
Dispensary teaching	9
Surgical pathology	9
Fractures	8
General surgical clinic	8
Ward rounds	4
Operative technique	3
Regional surgery	3
Surgical diagnosis	3
Orthopedics	3
Clinical clerkship	3
Animal surgery	3
Examinations and case taking	2
Urology	2
Anesthesia	2
Diseases of rectum	1
Externeship	1
Surg. body, surface and extrem.	1
Medicine	1
Public health	1
Anatomy	1
Fourth year	
Clinical clerkship	19
Dispensary	8
General surg. clinic	7
Surgical pathology	6
Regional surgery	5
Gen. surg. lectures	5
Special clinics	4
Ward rounds	4
Out-pt. case taking	3
Anesthesia	3
Surgical diagnosis	3
G-U lectures	2
Surg. head, thorax, abdomen	2
X-ray	2
Neurological surgery	2
Operating room work	1
Surgical anatomy	1
Industrial surgery	1
Animal surgery	1

Comment:

Second year: the principles of surgery and minor surgery outweigh all other orders of teaching in this year.

Third year: in this year the principles of surgery, dispensary teaching, surgical pathology, and surgical clinics, with emphasis on fractures and other forms of minor surgery, occur most commonly in surgical curricula.

Fourth year: the clinical clerkship is the outstanding method of teaching this year. In a good many schools a surgical clinic persists; few schools still give lectures to fourth-year students. In a group of schools there is a reversal of the commonly accepted curriculum in that bedside clerkships are given the third year and, therefore, dispensary teaching the fourth year. There seems little question about the logic of this change, since it gives the immature third-year student the opportunity for the case study of a single patient with plenty of time, and puts him in the busy jumble of the dispensary in his fourth year when he has had more experience. The difficulty of this reversal is that third-year students are hardly qualified to assist in surgical operations, whereas a fourth-year man may well be a good assistant and may at the same time be given that greatest adjuvant to teaching, great stimulation.

Question C. "How much time in general is required in the curriculum?" There are twenty-two answers in all, but because of peculiarities in curricula in certain schools I was able to use only the data obtained from thirteen schools. These schools are not selected in that I do not know even now the names of the schools, but cited merely because they had curricula which could be reasonably compared. In these thirteen schools, second-year teaching averaged 49 hours, third-year teaching, 257 hours, and fourth-year teaching, 329 hours. giving an average total surgical hours in the curricula of 637 hours. Unfortunately, I have not the total curriculum hours for the whole school, so that the relation of this 637 to the total is not available. The total is probably in the neighborhood of 3500 hours.

Comment: Not much value can be placed on these figures, in the first place, because in certain schools, hours added to the curriculum in clinical branches and laboratory branches are counted two for one as compared with a lecture or didactic exercise. The indirect workings of these separate schools I do not know, but the general relation of increasing hours is fairly representative of most schools. The figure 329 for fourth-year teaching would represent about two months of clinical clerkship, which is a fair proportion for surgery to have unless it is to include a lot of work in the surgical specialties as well as in general surgery. The figure 257 for the third year would include clinical lectures and dispensary teaching. I think it fair to state that the hours set aside for surgery in the second year are quite inadequate, for it would seem wise to have enough time in the second year reserved for the courses in both general medicine and general surgery to equip the medical student in these propaedeutic courses with the *methods* by which he is to study disease. The student should in his first two years acquire information about the normal body and the normal mechanism of its functions. If, then, he is

equipped with clinical methods by the surgeon and the physician for studying aberrations from the normal, he has at hand those methods which will tell him when the normal is distorted and, therefore, when disease is present.

Question D-1. "What do you consider the most important matters for a department of surgery to give to undergraduate medical students?" There are thirty answers in all. The table below shows the numerical response.

Surgical diagnosis	22
Principles of surgery	21
Surgical pathology	12
Indications for surgery	11
Basic sciences	9
Trauma and sepsis	8
Physical examination of patients	7
History of surgery	2
Urgent surgery	1
Knowledge of literature	1

Comment: It is again obvious that when the direct question is put to surgeons, they believe surgical diagnosis, the principles of surgery, the examination of patients, and the indications for surgery are the important things for the undergraduate student to be taught.

Question D-2. "Do you consider it your duty to teach practical operative surgery?"

No	31
Yes, as far as surgical technique is concerned	9
Yes, as far as animal surgery is concerned	5
Yes	4
No, but assist at certain number of operations	1
Doubtful	1

Comment: Here again there are thirty answers and it is even more plain here than in the answers to D-1 that operative surgery is not what we should teach the undergraduate medical student.

Question D-3. Here I have put direct questions to see whether teachers felt they had sufficient time to cover their topic. There were thirty-five answers, all of which were practically unanimous in stating that there was time and that there were facilities to cover carefully the teaching of trauma, including fractures, the care of sepsis and the teaching of anesthesia. Only in the last part regarding anesthesia was there some doubt or were there negative answers. Though twenty-four people said there was time to give instruction in anesthesia, eleven people answered in the negative. This is an important matter and may well be one of the things our Committee should take up, for I have long been convinced that the teaching of anesthesia is not well done anywhere in the United States of America, and yet the obviation of pain is one of the principles of surgery. Operations without pain, without sepsis, and without blood loss are apt to be very successful, and infringements of any of these principles are likely to bring disaster.

I had expected to make a general comment on this group as a whole, but perhaps, for the purposes of the individual who will write up the general preliminary report, it would be wiser for us not to say too much at this time. One might state that, on the whole, the leading surgeons teaching surgery in the United States have indicated that in the teaching of surgery to undergraduates they would like to emphasize the principles of surgery, surgical pathology, the care of minor trauma and sepsis, and the matter of surgical diagnosis. These same men have indicated strongly that they do not think it is their job to teach operative surgery. This is a most important finding, because there are still state boards of registration in medicine that demand of students graduating from schools knowledge of major surgical procedures. The threat which this conveys sometimes reaches back into schools and we therefore find medical students graduating who think they know how to do surgical procedures. This is, of course, a dangerous state of mind to create in a young doctor, since immediately upon graduation he may go out and begin the performance of dangerous operations for which he is entirely unfit. Out of all this I hope will come mature and thoughtful recommendations, perhaps to the schools, but also to the state licensing boards, making it clear that surgery is a dangerous specialty, and requiring of individuals who would practice it extra years of education and special training before they are allowed to assume responsibilities that may involve the lives of their fellow-citizens.

ARE STATE HOSPITAL RESOURCES MISUSED?

The question has been raised as to whether more adequate tuberculosis hospital facilities per unit of population should be increased or even maintained here in Massachusetts. Dr. Bigelow, Commissioner of Public Health, in a portion of his department's legislative recommendations, filed with the office of the Secretary of State, has expressed himself as feeling that hospital resources are being misused.

As a remedy for this situation, Commissioner Bigelow recommends a change in the law governing State subsidy to cities and towns hospitalizing tuberculosis patients. The current charge to municipalities for such hospitalization, in State institutions under the direction of the State Department of Public Health, is $5 per week.

Commissioner Bigelow proposes that the Health Department set forth definite standards of hospitalization before State subsidy could be rendered to cities and towns.

NEW ENGLAND SURGICAL SOCIETY

A CASE OF INTRATHORACIC GOITRE*

BY EDWARD L. YCUNG, JR., M.D.†

THE average substernal enlargement of the thyroid is not uncommon and offers no unusual difficulties in treatment. However, when an adenoma has become entirely intrathoracic and has increased in size so that it no longer can move easily through the narrow opening at the level of the top of the sternum, it may present an entirely different picture and become one of the most distressing conditions for the patient and, surgically, may offer one of the most spectacular cures of any condition that we are privileged to witness. The following case is reported not only as an excellent example of an intrathoracic goitre of this extreme type, but because of a few factors that are out of the ordinary both in relation to the condition itself and some of the sequelae.

Miss W., aged 60, a white Irish practical nurse, was admitted to the East Medical Service at the Massachusetts General Hospital April 6, 1932, complaining of a lump in her throat and difficulty in swallowing and breathing. She came in with the diagnosis of neoplasm of the esophagus. For a year and a half she had had weakness, pain in her feet and a sensation of needles in her throat with a constant desire to clear it. Fourteen months ago she had to give up work, felt a lump under her sternum and lost her desire for food. Twelve months ago there was increasing hoarseness and difficulty in swallowing. Ten months ago she vomited after eating. For the past four months there has been increasing difficulty in breathing as well as in swallowing, pain, and a feeling of pressure under the sternum, especially on exertion. There have been paresthesias in her fingers and feet. She has had from one to four liquid movements a day without any apparent cause. During the past year and a half she has lost thirty-five pounds in weight and has lived almost entirely on eggs and vegetables, and recently has been able to swallow soup only.

Examination: The patient is well developed but poorly nourished. She is lying in bed holding her head slightly extended and in one position because of inability to get sufficient respiratory exchange in any other place. She is obviously working very hard to get enough air. The skin of her face is leathery. Her teeth are poor. There are prominent veins in the neck, chest, and upper arms. Blood pressure is the same in both arms, 150/70. The chest is barrel-shaped with limited expansion. The heart sounds are distant and of poor quality. There is a soft systolic murmur at the apex and an occasional extra systole. There is marked thickening of the brachial and radial arteries. There is slight pitting edema over the tibiae. On neurological examination, there is diminution of all forms of sensation in a glove and stocking distribution of the hands and legs. There is some weakness of the grip and of the lower leg muscles. On local examination, the thyroid itself was not particularly prominent. The lower pole of the left lobe could be felt; it moved normally with deglutition, and there was no mass connected with it that could be made out, although here was an indefinite fullness of the left side of the neck above the clavicle. Aside from these facts and her appearance of struggling for breath, there was nothing abnormal.

Laboratory data were essentially negative. Hemoglobin 65%. A smear was not remarkable. Stool negative. Hinton negative. NPN 33, CO2 55 volumes per cent. BMR -3.

X-ray taken at this time was reported as follows: "Compression of esophagus above arch of aorta. A large mass in the superior mediastinum displacing both esophagus and trachea to the right and anteriorly. Either aneurysm or new growth."

Two weeks later, report by Dr. Holmes: "Heart shadow enlarged to the left. Tortuous aorta prominent in region of the knob. Definite calcification in the aorta. Above the shadow of the aorta, an area of dullness roughly triangular in shape which disappears in the shadow of the neck. This shadow is quite dense with sharply defined margins; does not pulsate. Question of intrathoracic goitre."

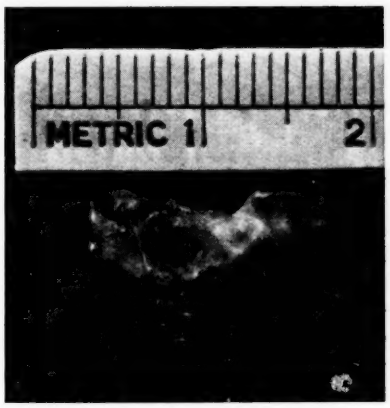
The next day a barium meal showed no obstruction of the esophagus, other than pressure from without, which was displaced to the right and anteriorly in the upper mediastinum. Walls of esophagus apparently not involved in the mass.

Consultations: Throat Department reported that cords moved well. No paralysis. Slight twist of larynx to the right. Trachea pulled to the right.

Dr. Churchill from the Thoracic Clinic: "I think I can feel a mass deep to the left just behind the clavicle. Most probable diagnosis carcinoma, probably arising from the deep layers of the esophagus."

The only other datum was that the tumor did not move on deglutition under the fluoroscope.

Operation was done on April 16. A surgeon from the Throat Department introduced a tracheal tube. The patient was then given intratracheal anesthesia. The usual collar incision was made. The tumor was found to connect with the left lobe of the thyroid laterally, not at the lower pole, and to extend backward and downward into the mediasti-



*Read at the Annual Meeting of the New England Surgical Society, at Hartford, Conn., September 30, 1932.

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num. The blood supply was controlled from above downward, the only difficulty being some bleeding from the very large lateral veins. The finger was then inserted into the mediastinum and a tumor the size of an orange delivered. The cavity extended under the trachea and esophagus and down into the mediastinal cavity. There was no bleeding. The cavity was lightly packed and drainage brought out through the incision.

Following operation, there was a paralysis of the left vocal cord and a very slight degree of wound sepsis which did not, however, prevent rapid healing. She had immediate relief of her difficulty in swallowing and breathing, and began to eat and put on weight. So far as the throat condition is concerned, she has remained well.

There has been some trouble since, which may be attributed to the lack of normal nutrition before operation. She entered the hospital the first of May complaining of increased muscle weakness and some paresthesia of legs and hands and the same diarrhea which has increased. This time a definite diagnosis of peripheral neuritis, probably of dietary origin, was made. There was definite but slow improvement on high vitamin and high caloric diet with yeast, cod liver oil, and Bemax. BMR on three occasions was —14, —16, and —1. She was last in the hospital in July with definite but very slow improvement. The diarrhea had disappeared but the weakness and paresthesia were disappearing very slowly. An x-ray at this time is interesting in that the report says, "The mass in the mediastinum is still present, but it neither displaces nor deforms the esophagus. The esophagus, however, is considerably dilated in its lower two-thirds and there is definite obstruction at the cardia. There is no irregularity in this region and the rugae pass into the stomach apparently normally. No evidence of soft tissue tumor in this region. The cause of the obstruction at the cardia is not evident. No evidence of malignancy." BMR at this time was —9.

This case is interesting first in that the adenoma did not come from the lower pole; consequently it could not be felt before operation as having definite connection with the thyroid. Practically always the extension from the thyroid comes directly from the lower pole, and as long as it can move freely with deglutition it should be classed only as a substernal thyroid and offers practically no difficulties in removal. As soon as it increases in size below the level of the top of the sternum, it may be so large that it cannot come back into the neck and it then becomes more difficult for a surgeon to handle as well as more dangerous to the patient. Secondly it illustrates the help which is given by an intratracheal anesthesia. It would have been very difficult, if not impossible, to do this enucleation without suffocating the patient had it not been for a stiff-walled tube against which pressure was made in delivering the tumor. It allowed the finger to go slowly enough so that the line of cleavage was strictly adhered to and no veins were torn. It was necessary to use traction from above as well as pressure from below because the size of the tumor, increased with pressure from below, particularly with the additional obstruction of the finger in the wound, which resulted in having the growth stick and not come out through the opening available until traction was also used. In the convalescence, the prolonging of drainage until granulation tissue had a chance to form and the removal of the drainage slowly resulted in complete and uninterrupted healing in spite of a slight degree of superficial sepsis.

The sequelae noted in the report which are of interest are particularly the peripheral neuritis and the obstruction at the cardia. It was felt that the first of these two was certainly due to the limited diet which the patient had had for months before operation. As this cleared up with appropriate treatment, it seems to clinch the diagnosis. The dilatation of the esophagus and obstruction at the cardia are more difficult to explain and it is a question whether they have any connection with the operation. We have assumed that the shadow still present, according to x-ray, is the shadow of the new tissue which had to fill in the cavity where the adenoma was. At the present time the patient considers herself well.

Discussion

Dr. Frederick B. Sweet, Springfield, Mass.: *Mr. President and Gentlemen*—All I can do is to emphasize some of the points that Dr. Young has made.

As he intimated, most cases of intrathoracic goitre are discrete adenomata and, strangely enough, in my experience at least, very few of them are toxic cases. As he intimated also, some of them are exceedingly difficult technically to remove, some of them very easy.

A little trick which has been very helpful in our clinic on occasion was given me by Dr. Lahey. In those cases where the descent of the growth is deep in the thorax, and the growth itself very large, if you put your finger down the line of cleavage posteriorly and gently lift up on the growth, at the same time teasing it out by seizing it progressively with a pair of volsella forceps, a delivery which seems all but impossible becomes very easy.

Another point I should like particularly to emphasize is the necessity of packing these great cavities with gauze, both because they are so large and because there is considerable danger from the accumulation of serum, unless they are packed off. The packing should be continued for a sufficient length of time for the cavity to become obliterated so that there can be no accumulation of fluid under pressure with consequent danger of mediastinitis.

Dr. Frank H. Lahey, Boston, Mass.: We brought out in a recent article in *Surgery, Gynecology and Obstetrics* the point of pressure from below and traction from above in the delivery of intrathoracic goitres. One should not take out intrathoracic goitres by morselization because the blood supply for intrathoracic goitre is from above. If you take the top of the intrathoracic goitre off and leave the bottom, it

sloughs and then you may well have the real cause of a fatality, mediastinitis.

If there has been one thing we have learned in several hundred intrathoracic goitres, it is long drainage. I do not know why we did not have more fatalities than we did before we learned this. We used to take the drain out early and then had the neck swell up so that the contents would squirt up a foot when pressure was relieved. Only the fact that they had established protective granulation in the mediastinum prevented more fatalities. These patients with intrathoracic goitres have to be thoroughly drained, often for several weeks. The logical approach to intrathoracic goitres is to ligate the superior thyroid artery, turn the gland forward, and you then have the natural approach to the mediastinum along the great vessels. You can bring the goitres out of the chest by pressure of the finger from below. Double hooks can be put on the top of the gland so that it is pulled up from above, and thus you do not increase the transverse diameter of the tumor. Practically all of them will come out by this method.

We have twice resected the sternum early in our experience with intrathoracic goitre. I do not believe that today, with the added experience we have had with a large number of intrathoracic goitres and the above plan which we devised, we would have to resect the sternum in those cases.

FUNGUS SKIN DISEASE AND ALLERGY: A CAUSAL RELATIONSHIP*

BY J. L. GRUND, M.D.†

INTRODUCTION

WITHIN comparatively recent years, attention has been focused on the generalized manifestations of those dermatoses which on first consideration appear as of only local and minor import. This is well exemplified in the experimental and clinical studies that have been devoted to skin disorders attributable to the various fungi, especially when they are associated with generalized integumentary changes, which morphologically bear no resemblance to the previously developed local fungus affection.

In correlating the various findings that have appeared to date, sufficient data are at hand to indicate that the mentioned generalized skin phenomena are not merely casual or coincidental, but that they are present in consequence of profound changes which occur in the immune biologic mechanism of the affected organism. The skin acts in these instances as the indicating medium of an existing allergic state. This is initiated by the penetration of a local skin area by the fungi, the development of an apparently benign lesion at the site of their entrance and by the subsequent hematogenous transport of the fungi or their toxins or both to other portions of the body. Here they are destroyed either immediately or shortly after their deposition by the skin, which in the process has been rendered allergic. To make analogy, the entire clinical picture bears close fundamental resemblance to what occurs in such diseases as syphilis and tuberculosis. A state of sensitization is brought about; the entire reactive mechanism becomes operative with the resulting skin hypersensitiveness leading to various forms of skin reactions. Of added significance is the fact that when such a state (allergy) is established, exposure to substances of other than a fungous nature may elicit essentially similar reactions.

In connection with the fungous aspect of the picture, the lesions representing the end results of the process have been termed "ids" with prefixes in accordance with the name of the proved offending fungus. Williams[1] has suggested the name dermatophytid to cover all these distant eruptions regardless of the particular infecting fungus.

LITERATURE

A body of literature has been gradually built up denoting the existence of the aforementioned concept. In 1905, Lewandowsky[2] described a case of kerion of the scalp, due to a large spore ringworm, associated with a generalized lichen spinulosus eruption. He did not recognize any connection between the two differing eruptions. The subject received no further attention until 1912, when Jadassohn[3] in the course of a discussion of Bloch's paper on trichophytosis, described several cases of trichophytic kerion of the scalp associated with scattered spiny lichenoid papules over the trunk, and called attention to the essential nature of the causal connection between the two widely differing and separated eruptions. Guth[4] a year later reported additional cases.

In addition to the allergic lichen spinulosus eruption other types of generalized skin eruptions have been described. Lesions erythema nodosum-like have been reported by Pulvermacher[5], Sutter[6] and Bloch[7]. These have been accompanied by swollen joints. Distant pustular[8] eruptions as concomitants of primary scalp fungus infections have also been mentioned.

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Finnerud[9] called attention to an eczematoid form, made up of round or oval efflorescences, bright red with yellow and furfuraceous centers. This particular type is usually present on the upper half of the chest and closely resembles the eruption of pityriasis rosea.

The eruptions described have in practically all instances accompanied deep tineal infections of the scalp; the kerion present and the entire picture having been caused by a large spore ringworm, the trichophyton. The small spore ringworm, the microsporon, may however produce an essentially similar picture. Arzt and Fuhs[10] reported a case from the microsporon epidemic in Vienna in 1924. Citation of the presenting features of their case is worthy of repetition. A nine year old schoolboy presented on the side of the scalp a five cent piece sized, honey-combed, sharply defined, red, soft and raised lesion. On its surface there were many sieve-like pus containing follicular orifices. Occasional broken off hairs containing fungi were present. The pus and hair stumps planted on a medium of malt sugar grew cultures of microsporon audouini. Fungus extracts, trichophytin and mikrosporin, introduced intracutaneously, produced positive reactions, indicating the presence of a state of sensitivity. Three days after the introduction of the extracts, there appeared on the upper central portion of the patient's chest and on the upper extremities, a tuberculid-like exanthem of a lichenoid structure. The scales taken from these lesions were negative for fungi both culturally and microscopically. With the administration of increasing amounts of the fungus extract, mikrosporin, a rapid flattening and drying up of the scalp lesions were evident. This was accompanied by the involution of the generalized lichen microsporicus. Arzt and Fuhs called attention to the high degree of allergy present as demonstrated by the strong local skin reaction to the intracutaneous introduction of both the trichophytin and the mikrosporin. They further believed that the generalized exanthem had as its basis an hematogenous dissemination of fungi and a developed allergic state.

In the cases described, it is to be noted that the generalized dermatophytids have accompanied mycotic foci of a deeply inflammatory nature as represented by the entity, kerion celsi. The basis for the development of an allergic state and a generalized efflorescence of dermatophytids is undoubtedly established with greater facility when the original pathologic process is of a deeply penetrative character. However, dermatophytids have been frequently seen and reported in connection with fungus skin diseases of an essentially superficial nature. In 1923, Rajka[11] described a generalized scarlatiniform eruption in a woman with a trichophytic eruption on the feet. The infection was severe and culture growth showed a Trichophyton gypseum to be the offending fungus. It was impossible to recover or grow any organism from any portion of the generalized eruption. After an injection of a killed culture of trichophyton (trichophytin), fever and intensification of the lesions on the foot (new vesicles) were apparent. The patches on the body became more confluent and scarlatiniform. Following this development, recovery was rapid. Pusey[12] in 1925 mentioned an erythema multiforme-like eruption as a complication of ringworm of the glabrous skin. Williams[1] shortly after described a case with a generalized eruption closely resembling pityriasis rosea accompanying an epidermophytosis of the feet.

Before proceeding to the consideration of the eruption, vesicular in type, most commonly present as an allergic manifestation of the very common fungus infection of the feet, epidermophytosis, it is necessary to review the various findings which collectively serve as one of the intervening links in the connecting up of the primary fungus affection with the development of its distant allergic concomitant. These have been in the nature of blood findings, in which an offending fungus, a pathogen, etiologically related to the primary fungus lesion, has been found in the circulating blood. In 1921, Ambrosoli[13] recovered Trichophyton gypseum asteroides both from the blood and the scalp of a boy with kerion of the scalp and tinea circinata of the skin of the neck. At the time of the taking of the blood for culture, the boy had fever and enlarged cervical glands. On his body, there was a diffuse erythematous eruption with many superimposed follicular papules. In the same year, Jessner[14] reported a case in which he found an organism closely resembling Trichophyton granulosum in the blood of a boy aged ten, four weeks after an x-ray treatment of a tineal lesion. The blood culture was carried out several days after the occurrence over the body of the boy of a general measles-like eruption, which later assumed a lichenoid character. Jessner[15] made additional important findings in the case of a man with severe tinea of the bearded region. After the injection of trichophytin into the latter lesion, blood cultures presented growths of Trichophyton gypseum which was the parasite recovered from the diseased area of the face. In a case of kerion of the scalp but unaccompanied by a diffuse body eruption, Masia[16] recovered the Trichophyton crateriforme from the blood.

The above findings in the human being were duplicated by essentially similar ones in animals. Kogoj[17] inoculated animals hematogenously with a fungus substance and subsequently found fungi in skin lesions which he produced on the skin of the animal by the infliction of slight trauma. Fried and Segal[18] after the in-

travenous injection into rabbits of an emulsion of pathogenic fungus were able to produce with scarification of the skin, a lesion from which the fungus could be obtained. This was accomplished in 38 per cent of the animals tested.

In the literature presented thus far, a number of salient facts are evident. To recapitulate, a pathogenic fungus may attack the hairy or the glabrous skin. In addition to the primary mycotic focus which then develops, a distant eruption may occur which bears little resemblance to it. Fungi, similar to those found in the primary lesion, may enter the blood stream, as has been demonstrated by blood culture. Fungi have been demonstrated in the blood stream of animals and in addition in the distant skin lesions subsequently produced; the fungus in these instances having been similar to those present at the original point of entry. In the human being, however, in only extremely rare instances has the offending fungus been grown from the distant lesion (dermatophytid). When it has been found, the lesions from which they have been recovered have been less than two days old. Attempts to grow the fungus from older lesions have been fruitless. This phenomenon denotes an early destruction of the fungi which may be present in the distant lesion. Of further importance is the fact that it is possible to demonstrate the presence of the fungi in the original tineal lesion.

The preceding has been more firmly established by the works of Von Graffenried[19], Walthard[20], Jadassohn and Peck[21], and Peck[22], who reported a total of 50 cases of epidermophytosis of the feet with additional lesions on the hands. In 48, fungi were present in great numbers and were easily demonstrable in the lesions on the feet while those on the hands were negative for fungi both microscopically and culturally. In only two instances were fungi recovered from both the feet and hands. In his last series of cases, Peck produced a mycotic infection of the feet of a previously well patient. Thirteen days after the beginning of the experiment, the patient's intradermal trichophytin test was positive. Twenty-four days later, a vesicular eruption appeared on the hands. Peck could not isolate the fungus from these lesions. After the spontaneous healing of the produced infection, Peck accomplished a reinfection. At the end of two weeks, a vesicular dermatophytid reappeared on the hands. The latter lesions were again negative for fungi while those on the feet were positive. In one of his patients, Peck isolated the offending fungus from the blood stream.

The findings in the previous works call attention to the dominant rôle played by allergy in the entire subject of fungus infection. The signal contributions of Jadassohn and Williams are of great importance in this connection. Their work has been established and amplified by the subsequent reports of W. Jadassohn and Peck[23], Broekema[24], and Sulzberger and Lewis[25]. By utilizing test methods of value in diseases of an allergic nature, they have demonstrated that a positive trichophytin test is of frequent occurrence in epidermophytosis of the feet with distant phytids. The test is carried out by the application of a fungus extract to the abraded skin or its introduction intradermally. The observations reported emphasize the positive trichophytin test as a sine qua non for the existence of trichophytids and a state of allergy.

The presence of a state of hypersensitiveness initiated by the products of pathogenic fungi and evidenced by the presence of such entities as asthma, hay fever or urticaria has been reported. Sulzberger and Kerr[26] mention a case of urticarial hypersensitiveness to trichophytin, in which passive transference by means of blood serum (Prausnitz-Küstner method) proved successful. Attention was called to the fact that the discovery of this type of hypersensitiveness makes it possible that trichophytin products of pathogenic fungi might be the cause of some asthmas or hay-fevers as well as of urticarias. In the further extension of the preceding, Ramirez[27] published the report of a case of asthma which could be traced to trichophytin. Wise and Sulzberger[28] reported a case in which the products of ringworm fungi (pathogenic hyphomycetes) were shown to have been the causative agents of an attack of hay-fever and possibly of a typical neurodermite.

Of interest is the report of Van Dyck, Kingsbury, Throne and Myers[29], describing their results with trichophytin as a diagnostic and therapeutic agent in mycotic infections of the skin. One hundred patients, with mycotic-like or tineal infections of the skin, all of whom had shown positive trichophytin tests, were treated. Thirty-two per cent were cured; 28 per cent were greatly improved; 21 per cent were slightly improved; 19 per cent were unimproved.

In addition to clinical observations, there have been supplemented experimental animal results which establish the allergic concept on a more tenable basis. Sulzberger[30] inoculated cutaneously 100 guinea pigs with Achorion quinckeanum. One hundred and forty-one blood specimens were obtained from the animals and examined at different intervals postinfectionum. Sixteen of these cultures were positive and fell into two phases, an early one (one hour to two days postinfectionum), a later one (from ten to eleven and twelve to thirteen days postinfectionum), and an intervening phase. Sulzberger believed that the later period coincided in time with the maximum of allergy as represented by the acme of development in the primary fungus lesion, in which marked histologic changes had occurred and from which the fungi had already begun to disappear.

REPORT OF CASES

The writer intends to present a number of cases illustrating the contentions and findings already mentioned. A number of additional observations will be noted and commented upon.

CASE 1: M. S., male, aged 28 years, was seen on July 7, 1931 for "blisters" on the palms and fingers. They itched only slightly. There was a past history of chronic gonorrhea with recurring attacks of iritis. One year previously, he suffered an attack of gonorrheal rheumatism, which was accompanied by an unusually severe attack of urticaria. The latter persisted until the rheumatism disappeared.

During the four weeks previous to the present visit, he experienced very slight itching of the soles. This had been of such a slight nature that he paid no attention to it. Approximately two days before being seen, he noticed a sudden out-cropping of many small thick-roofed "blisters" which covered both his palms and all the fingers.

Examination revealed scaling and spare vesiculation on the left sole. The vesicles were deep and thick-roofed. On the right sole there were occasional groups of similar vesicles. Scaling and maceration were present between the fourth and fifth left toes. Both hands and fingers were with the exception of their dorsal aspects literally studded with vesicles which were larger and of a more superficial character than those on the feet. Three days after first seen, the vesicles on the hands and fingers were replaced by lamellar scaling and desquamation. Pieces of tissue from the lesions of both the hands and the feet were planted on Sabouraud's media. The intracutaneous trichophytin test was positive. Plants of tissue from the foot lesions grew the epidermophyton Kaufman-Wolff; plants from the hand lesions were devoid of growth.

The lesions on the feet disappeared several weeks after the inception of antiparasitic treatment. The untreated lesions of the hands disappeared two weeks after first being observed.

Comment.—The present case is typical of that form of epidermophytosis frequently accompanied by dermatophytids, in which it is impossible to cultivate the infecting fungus from the distant lesions. The presence of the epidermophyton in the primary focus of the feet, its absence in the distant lesions of the hands, the positive trichophytin skin test and the disappearance of the hand phytids without treatment present an interesting array of facts. These coincide with those observations previously described.

Of further interest in connection with the more recent happenings in this case, was the past history of severe urticaria. It is not illogical to assume that a state of allergy had previously been provoked probably by his gonorrhea, and that this had manifested itself at that time by a severe attack of urticaria. At a later date, his acquired allergic state reasserted itself in the form of an unusually intense attack of dermatophytids of the hands following the occurrence of an attack of epidermophytosis which was of such a mild nature as to entail only very mild local discomfort. As a corollary to the latter observation, it is not impossible to assume that a reversed sequence of events could occur, namely, the production of an allergic state by an attack of ringworm and its future manifestation (urticaria, erythema, pruritus, etc.) when the patient is exposed to an irritating substance of an entirely different nature (infection, food, chemicals, etc.).

CASE 2: E. Q., male, aged 23 years. The family and past histories were negative. There was no history of asthma, hay-fever or the previous presence of any skin disease. He was first seen on November 24, 1930, for itching and burning of the soles and the toes of both feet. This condition had been present for seven days and had become intolerable during the latter part of this period. On examination, he presented marked maceration of the skin between all the toes of the right foot. The epidermis was undermined and loose; that of the distal end of the plantar surface of the foot was similarly affected. Many thick-roofed vesicles were present on the dorsa of the toes of the right foot and on the right sole. The left foot was unaffected. A diagnosis of a dermatitis repens type of epidermophytosis, an acute and severe form of this disease, was made. Portions of the vesicles and of the scaling skin were planted on Sabourraud's media. An antiparasitic ointment was prescribed and a one sixth erythema dose of roentgen rays was administered.

The patient seen five days later, presented a disseminated eruption over his entire body. He stated that it first appeared on November 28. A diffuse erythematous eruption, erythema multiforme-like, was present on the neck, trunk, arms, legs and the dorsa of both feet. He experienced no subjective symptoms. Three days later, the secondary eruption had become fainter; that on the legs and the dorsa of the feet had assumed a purpuric character, the homogeneous rash having been replaced by well-defined areas consisting of many fine purpuric puncta. The very active primary lesions between the toes and on the plantar surface of the foot were definitely improved, dry scaling having replaced the sodden, macerated and undermined skin previously mentioned. Seven days later (December 6), the disseminated rash had entirely disappeared and practically no pathology was evident on the foot.

Plants of tissue from the lesions of the feet grew a trichophyton; those made from the trunk and leg lesions were devoid of any growth.

Comment.—The present case portrays a number of interesting features. Shortly following the roentgen ray treatment of the relatively severe epidermophytosis, a systemic eruption developed. An essentially similar occurrence has been reported by Artz and Fuhs[10] and was assumed by the latter to have been caused by an absorption of toxins and fungous elements from a local and temporary increased inflammatory process. In the present case, the roentgen ray could well have been the provocative agent. Of note was the assumption of a purpuric character by the eruption on the legs. The possible explanation of occasional cases of unexplained purpura by the local presence on the feet of a trichophytosis is worthy of consideration. Of further note was the growth of fungi from the primary lesions of the feet and the inability to grow them from the systemic lesions. The rapid healing of the fungous lesions, with the development of the erythematous phytid on the trunk and elsewhere, was striking. This is explained

by the deep-seated nature of the local fungus process and the roentgen ray action which together acted in the enhancing of the subject's immunity producing mechanism.

CASE 3: W. V. (Case of Dr. A. Blumenfeld) was first seen on June 25, 1930. He complained of itching of the entire body and of the presence of many "hard and small peeling pimples", over a period of three months. Two months previously, he noticed "red spots" on his legs; these did not itch. He was told that he had "some spots" on his back. On passing his hand over these, he felt pimples like "goose flesh."

On his right buttock there was a dime-sized pigmented patch made up of many small follicular prominences with keratosic conelike tops. On the posterior aspects of both thighs, there were similar discrete patches. Similar lesions were present on the left upper eyelid. The skin at the base of the right toe presented a group of thick-roofed vesicles. The skin between all the toes was sodden, scaling and fissured.

Plants of tissue from the lesions of the feet grew the Trichophyton gypseum; nothing grew from the tissue plants taken from some of the follicular lesions.

Comment.—The generalized eruption in the present case was undoubtedly the chief complaint. Its true recognition rested on the discovery of its cause, an epidermophytosis of the feet. It was not productive of symptoms, yet it did effect such changes in the patient as to elicit a generalized lichen spinulosus. The latter form of eruption has, not uncommonly, been the concomitant of a severe and deep-seated trichophytic process of the scalp or of a microsporon[31] involvement of the latter region associated with kerion. The present case indicates that it may even accompany a benign, symptomless epidermophytosis.

This particular type of eruption, although it has been frequently reported as a dermatophytid, has been mentioned in connection with hypersensitiveness to substances of other than a fungous nature. It has been reported as occurring with the administration of diphtheria toxin in the carrying out of the Schick test[32]; it has also occurred after the ingestion of phenolphthalein[33] and with the administration of arsphenamine[34]. The common factor linked up with its production is obvious.

SUMMARY

The literature on the probable existence of a relationship between fungus disease and changes which occur in the immune biologic mechanism as a result of its presence has been presented.

Illustrations of allergic manifestations of fungus disease ranging from a simple erythema and extending through the various fundamental dermatologic lesions of wheal, papule, pustule (follicular papule), vesicle to a purpura have been presented.

An instance of a previously produced allergy, from other than a fungus cause, which had apparently become latent, but which might have been activated by a benign epidermophytosis and manifested itself by an extensive systemic eruption of dermatophytids, was described. The possibility of a reversed order of events occurring, namely, the production of a state of allergy by the ringworm and its activation (allergy) at a later date through exposure to an irritating substance, was mentioned.

(NOTE. The culture work in this series of cases was carried out by the late Dr. A. Blumenfeld.)

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TRAUMATIC BILE CYST OF LIVER*

BY JOHN F. CURRAN, M.D.,† AND RAYMOND H. GOODALE, M.D.†

THE following case of bile cyst of the liver is the only one in the records of the Worcester City Hospital. Records of only two others were found in the literature. The rarity of this particular type of cyst warrants bringing it to your attention.

CASE REPORT

A 46 year old Irish laborer was admitted to the hospital in a state of shock with a temperature of 94°F., a weak pulse of 80 per minute and respirations of 11 per minute. He had been sent down to clean a sewer, and apparently the current swept him off his feet. It carried him some distance thus delaying rescue for about two hours. He was taken out conscious, but chilled and weak. At no time was he overcome by sewer gas. He does not remember any specific blow on his abdomen. At this time his physical examination was negative except for cold and cyanotic extremities.

He responded quickly to shock treatment and was allowed to go home after five days in the hospital.

During the next five weeks he lost weight and appetite, developed a productive cough, had sweats, and complained of pain in the left lower back and in the right lower quadrant of the abdomen. No further history was obtainable because of lack of coöperation on the part of the patient.

Physical examination with positive findings. There was a dull, tender, round, smooth mass about the size of a lemon located in the left umbilical region. There was also tenderness over the left sacroiliac region and limitation of trunk motion in all directions. No clinical jaundice was present.

X-ray Reports—Nothing unusual is seen in the gross structures of the chest. The lung root and trunk shadows are not increased in size and extent, and the parenchyma shows no infiltration. No evidence of active lung lesion is seen. The lumbar vertebrae, especially the third and fourth show hypertrophic changes, otherwise nothing unusual is seen in this portion of the spine.

G. I. series—The stomach is displaced toward the left side and the distal third of the stomach is poorly filled in all films. This is apparently due to a tumor outside of, but pressing on, the stomach. The six hour film shows that the stomach is practically empty and the head of the meal is at the splenic flexure. The 24 hour film shows the barium scattered throughout the large intestine; nothing unusual is seen in the intestines. Summary: The filling defect of the stomach is apparently due to some extrinsic tumor displacing the distal portion of the stomach toward the left.

Laboratory Findings: White blood count, 14,000 before operation; 7,300 after operation. Red blood count 3,420,000 to 4,000,000. Hemoglobin 75%. Wassermann and Kahn tests negative. Sputum negative for tubercle bacilli on three occasions. The urine was negative, the blood sugar was 100 mgs. and the nonprotein nitrogen was 55.3 mgs. per 100 cc.

The patient at this time was under the care of one of our staff, Dr. Joseph P. Mulhern, who had a surgical consultation with one of us (J. F. C.). A diagnosis of pancreatic cyst or traumatic tumor of the omentum was made and operation was advised.

Operation—The abdomen was opened through a left paramedian incision, and a thin-walled, pseudocyst measuring about 14 x 12 cm. was found, located under the left lobe of the liver. This was opened and evacuated, and a Penrose drain was inserted. The fluid in the cyst was clear yellow bile which was sterile when cultured. The patient was discharged well, thirty days after operation.

REVIEW OF LITERATURE

Only two cases of a similar nature were found on searching the literature, and these are herewith given in some detail for comparison.

The following case was cited by Whipple[1].

A boy, aged 16, was kicked in the abdomen by a horse four weeks previous to his admission to the hospital on January 6, 1898. He suffered from pain directly after the kick, but not much subsequently.

He was put to bed and kept there. The next day he vomited; no record of the color or amount of the vomited matter was kept. About a week after the accident an abdominal swelling was noticed; this gradually increased in size up to the time of his admission. He was a thin anemic boy with a pinched expression and somewhat quickened respiration. The upper part of the abdomen contained a large fluctuating tumor occupying the epigastric region and parts of the hypochondriac, lumbar and umbilical regions. The tumor was dull on percussion, not painful or tender on palpation and appeared to be about eight inches in diameter. On January 8 an incision was made in the linea alba above the umbilicus, and on opening the peritoneal cavity the wall of the tumor presented at the wound. An exploring syringe drew off some thin, clear, yellowish fluid. The cyst was found to have extended deeply down toward the transverse fissure of the liver in one direction and toward the umbilicus to have separated widely the layers of the suspensory ligament of the liver. Its cavity was wiped fairly dry with sterilized swabs on holders and in doing this some ochery fibrinous material was brought away from its walls. The lower part of the abdominal wound was closed and the cyst wall was attached with interrupted sutures of fishing gut to the upper part of the skin edge of the wound. A large-sized drainage tube some seven inches in length was pushed to the bottom of the cyst cavity and iodoform gauze was packed around this, a thin strip being inserted into the tube itself. A copious dry dressing was applied. Examination of the fluid showed that it owed its color to the presence of bile pigment. On January 9 the temperature at 10 A. M. was 102 F. the pulse was 120, and the respirations were 28, and on the twelfth they were 98.2, 86 and 24 respectively. On the thirteenth the large drainage tube was removed and one of smaller size was inserted to the bottom of the cavity. From this date until the eighteenth the wound required dressing every day, but after that date the discharge of fluid became progressively smaller. On February 12 the drainage tube was removed and on the eighteenth the boy was discharged from the hospital, the wound being entirely cicatrized except at the upper part; he looked fat and well. The liver dullness was normal.

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The second case was cited by Aldridge[2].

An officer, aged twenty-four years, who had been in India about a year, enjoying good health during that time, while training a raw and hard-mouthed pony with polo stick and ball suddenly felt pain in the right hypochondrium. After a few hours this became very severe, and on examination it was found that there was severe pain and tenderness, most marked at a point just below the costal margin, a little to the right on the middle line. A slight puffy swelling could also be detected over the costal cartilages near this spot. The symptoms were attributed to rupture of some fibers of the rectus muscle and the patient was treated accordingly, but after a few days, the pain continuing, a swelling began to appear just below the costal margin. As fluctuation could be felt in this, it was aspirated and one and a half pints of slightly blood-stained clear fluid were withdrawn. On examination, besides showing the presence of blood, the fluid gave the reactions for bile acids and pigment, but though carefully searched for, no hydatid hooklets or membrane could be found. During this time the patient's temperature remained slightly above normal. From this time the case came under the care of another medical officer and the history was briefly as follows: After about a week, the fluid having reaccumulated, the cyst was again aspirated and similar fluid removed. On a third tapping a short time later the fluid proved to be slightly purulent. The cavity was now opened by incision, about a pint of pus was removed, and a drainage-tube was inserted, but, in spite of daily antiseptic irrigations of the cavity, symptoms of septic infection appeared and the patient died. No post-mortem examination was made.

COMMENT AND SUMMARY

Only one of these cases followed direct injury to the abdomen. The other two followed indirect injury as nearly as could be ascertained from the histories. Two developed palpable tumors within a week, while the tumor in the third was not discovered for five weeks. The two cases operated upon and drained recovered, while the one which was aspirated did not recover.

The same set of symptoms is not common to all three cases, but the following generalizations may be suggested. Traumatic bile cyst is a painful epigastric tumor developing slowly one week or more following a direct or indirect injury to the liver without clinical jaundice. The symptoms are localized pain, prostration, loss of appetite, sweats, and sometimes vomiting.

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THE PRESENT AND FUTURE SIGNIFICANCE OF THE FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE—FROM THE PHYSICIAN'S POINT OF VIEW*

BY LEWELLYS F. BARKER, M.D.†

AS a physician, I feel that both the public and the medical profession should be very grateful to this Committee, first, for its careful analysis of the whole situation; and, secondly, for pointing out the paths that it regards as most promising for better things in the future.

No one is more proud than I of what the medical profession has done in this country in the way of medical research, medical education, and the development of the possibilities of medical practice, but no one knows better than the medical profession that there are still great inadequacies of medical care and great difficulties in the distribution of medical care and in the payment of the costs of illness.

There is something wrong in the country where provision is not made for the 80 per cent of the people whose incomes are insufficient to supply them with proper medical care during serious illness. Of course, the medical profession does the best it can and the public is doing the best it can, it thinks, but there is something wrong in an organization that does not make definite provision for the care of serious illness among 80 per cent of our people.

All of the medical men agree that patients should have competent doctors, that patients should have access to good facilities, that the personal relations between doctors and patients should be maintained, and that the costs of medical care should be within the reach in some way or other of everyone who needs the care; in other words, the costs must be in some way distributed so that every patient who needs care can have it.

In this report all kinds of efforts that have been made have been carefully summarized. There was a large variety described, some of them excellent methods; some of them very defective; some of the methods of medical care are actually pernicious, as we medical men know perhaps better than the public. The Committee has recommended progress by a process of evolution rather than by revolutionary change and, as a medical man, that appeals to me as a wise recommendation.

In the discussion of agencies and distribution of costs, the Committee has avoided, on the one

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hand, the laissez faire attitude of doing nothing and, on the other, any sudden and rash venture into dangerous areas. It has recommended experimentation, especially by local groups.

As a doctor, it seems to me that if the recommendations of the Committee could be widely adopted, many of our present problems would be definitely solved; that there could be adequate curative and preventive medicine applied for all income classes; that ways of distributing, coördinating, and financing the costs of these services would be determined; the medical profession would be properly safeguarded and more adequately remunerated than now; the danger of degradation and demoralization of the indigent would be lessened, and the bugbear of a huge and dangerous bureaucracy would lose its terrors.

This Committee includes physicians and surgeons, social workers, public health workers, administrators, government officials, and representatives of the public. As has been said by several of the speakers, it is inconceivable that there could have been unanimity of opinion in such a group; undesirable that there should be unanimity of opinion. How could there be at this stage of development? Conclusions cannot be equally acceptable to all because of such varied interests and such different viewpoints represented on the Committee. The two things that are most criticized are the recommendations regarding group service and group purchase, and those are the two main recommendations of the Committee.

As to group service, there is great fear on the part of many in the medical profession that the domain of the individual doctor might be encroached upon, that doctors would come under lay control, and that the personal relations of doctors and patients would be interfered with. When it comes to group purchase, there you run up against one of the things that immediately excites the fear of state medicine on the one hand and of compulsory insurance on the other. This violent opposition, talk of Socialism, and of Communism, as we have heard, results largely from the bad patterns of group purchase that were established at first in Europe when the attempts were made to distribute costs. It is no wonder that those bad patterns should be feared; they should be, and they should be avoided.

The Committee foresaw a good many of these objections and in the majority report it laid great stress, as does the principal minority report, on the complete separation in any insurance principle of the costs of medical care from the cash benefits that go for loss of wages due to illness. By that single recommendation the Committee removed one of the chief apples of discord. If those two things could be kept absolutely separate in any general provision for distributing cost, you would avoid a great deal of trouble, for the principle of insurance was introduced in the first place not to provide medical care at all but for the relief of poverty. Medical care was tacked on as a secondary consideration and in most of the European patterns the two were kept together and there was a continual clash between the physicians on the one hand and the social workers on the other. There always will be clash between social workers and politicians on the one hand and doctors on the other if those two things, cash benefits and care of illness, go together. Even if cash benefits are kept entirely separate from the medical care, there are enough problems connected with insurance. Dr. Van Etten has referred to some of them*.

In European countries the mortality rate has not decreased under this insurance system. In the second place, the average number of illnesses has been increased. In the third place, the average duration of illness has increased under the insurance system; and, in the fourth place, some wholly new diseases, namely, the compensation neuroses, have come apparently as a result of these laws.

However, bad as it has been in Europe, bad as some of their patterns established have been, the average care of the sick is better than it was before insurance was introduced. The average income of the doctors concerned is larger than it was before; and, a third point, no country that has resorted to the principle of insurance has given it up. Those three things must be remembered.

The doctors on your Committee are members of the American Medical Association and they feel a great responsibility both to the public and to the medical profession, but we must not forget that doctors in general have a very individualistic attitude. They fear any mass action, any mechanization of medicine, and they are right, quite right. They realize, and properly, the great importance of the personal relationship of doctor and patient, and they are very likely to react with violent opposition to any innovation on account of their conservative, individualistic attitude. They are afraid of innovation, very much afraid of it.

I want to warn my colleagues in the profession against too negative an attitude. This world is not static. It is changing all the time. The medical profession must change with the rest of the world and keep pace with it. The negative attitude of our English and German confreres was very disastrous to the medical profession. That negative attitude did not prevent the development of health insurance in England and Germany. It put the doctors in a very false light. It excited public hostility against men whom the public were led to believe were acting from a selfish attitude rather than from a public-spirited purpose; and, worst of all, the medical men lost their influence and leadership and had very little to say about the patterns of insurance that were established.

*Dr. Van Etten's paper will appear in the next issue of this *Journal*.

Recently medical men have waked up to that fact in Europe and have seen that some kind of insurance was inevitable, and helped to form new patterns of health insurance, tried to protect both the public and the profession and tried to keep the medical control of the purely professional aspects of the work.

Shouldn't we in this country profit by those mistakes that were made in Europe? In my opinion forms of health insurance are bound to be tried out in this country. They should be tried out. We must watch them and try to direct them in the right way and discover what place, if any, health insurance has in the American program. Let the doctors lead in this and try to determine the policies and make them good, instead of bad, and in doing so the publications of this Committee will be very helpful to them, and if doctors take that attitude, instead of the other, negative attitude, we shall keep the good will of the public, avoid hostility, and maintain the dignity and ideals of the profession.

I welcome the minority reports. I welcome the statement of Mr. Hamilton. It is well to have those things put down, to see what groups and persons are thinking. I welcome the criticism of group practice, of the community center, of voluntary insurance. I see the danger of new evils and they have vividly portrayed them in their reports. Their emphasis on the county society method is well worth listening to. What the Milwaukee County Society has done might be imitated in other places. I should like to see that method tried elsewhere, but these minority reports and single statements ought to be very helpful. They ought to make everybody act more cautiously and more warily. To be forewarned about possible evils and dangers is to be forearmed against them.

Aside, wholly, from these differences of opinion, there are a host of opportunities for action. These opportunities ought to be recognized promptly and acted upon all over this country. There should be community organizations to study and to take the lead in the work, possibly some state organizations; no harm in a general national organization that will help and advise.

This Committee on the Costs of Medical Care goes out of existence this year. That must not be forgotten. What hard work its members have done! What noble contributions they have made! The fact-finding alone is worth the cost of the whole Committee. The advice they have given has been very carefully considered. Surely it is up to the leaders of thought and action in this country to pay serious attention to the report of the Committee and to do what they can to bring about reforms.

I think we owe a great debt to the Director, to the administrative staff, to the research staff, and to the foundations that have made the study possible, and I believe that the publication of this report today marks the beginning of a new epoch in the history of American medicine.

SOCIAL ASPECTS OF POLIOMYELITIS

BY ELLEN BARBOUR*

THIS survey was made with the purpose of studying social aspects of poliomyelitis. All cases of Boston residents reported between June 1 and October 1, 1931, were included. Home interviews were possible in 92 cases and information about 17 others was taken from hospital records. No data in addition to that on the report to the Health Department, namely age, sex and date of attack, were procurable for the remaining 28 cases. August was the peak month of this epidemic, during which 51 cases were reported. There were 23 and 25 cases respectively in July and September. June had only seven cases.

The ages of the patients ranged from less than one year to 27 years with the great majority falling under ten years. The accompanying table shows the variation between age groups in the number of cases and the extent of paralysis. Forty-four per cent of the entire group were paralyzed. Males escaped paralysis more frequently than females, as only 40% of the males were paralyzed as compared with 49% of the females. The tendency to paralysis was greatest with the children of pre-school age. Their percentage of paralysis was 13% more than that of the entire group. The age groups above 14 were so small that the percentages of paralysis have no great significance.

Since the purpose of this study was to examine the paralysis from a social standpoint, the following classification of the types of paralysis was used. An educational paralysis implies that the child has lost the use of a part of his body which makes it impossible for him to walk and receive his education as a normal child. This necessitates a special arrangement for his education. Seven boys and nine girls were found to be in this group. Three were between one and four years old, six between four and eight, five between eight and twelve, and two over twelve. An occupational paralysis means that a part of the child's body is stiff or useless which might prevent his taking certain types of work when older. Ten boys and one girl were in this class, of whom two were less than four years, five from four to eight, three from eight to twelve and one over 20 years old. A social paralysis means that the paralysis is so slight or of such a part of the body that it does not materially affect the child's progress educationally or occupationally but is only a disfiguring handicap. Fifteen boys and 18 girls were socially handicapped. Twelve fell

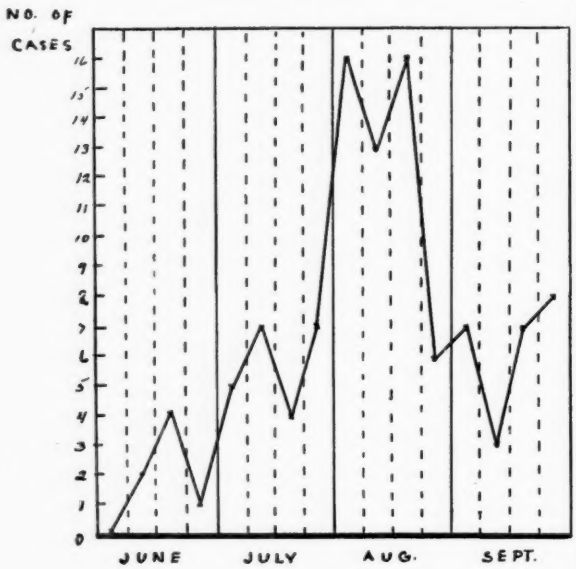
*Under the supervision of Dr. Lucile Eaves.

Barbour—For record and address of author see "This Week's Issue," page 1221.

between one and four, twelve between four and eight and the remaining four were over 16 years old.

The importance of the after-treatment of poliomyelitis cannot be over-rated. Therefore, the financial resources of these families with crippled children to care for and the actual physical condition of the homes are of interest in determining the possibilities and the probabilities of adequate and intelligent after-care. The economic status of these families may be judged in a general way by the occupations of the fathers. The majority of the children were found in the families of wage earners. Twenty-one out of 87 fathers were in the manufacturing and mechanical group. These men were for the most part factory operatives and garage employees earning between $15 and $20 a week. Seventeen, classed in the trade and transportation group, were laborers and truck drivers with wages between $15 and $20. Fifteen men were clerical workers and these usually had weekly earnings of over $30. The eight professional and seven public service men with the exception of one, were earning adequate wages for normal living but had very little savings. Three fathers in the domestic and personal service group and two dairymen had small wages.

POLIOMYELITIS CASES REPORTED IN BOSTON, JUNE-SEPTEMBER, 1931



The estimations of the condition of the homes were made by one person thereby avoiding any difference of standards. Seven children came from very poor homes and of these three were educationally, two occupationally, and two socially paralyzed. Seven more came from poor homes of whom three were educationally and four socially handicapped. Of the seven who lived under fair home conditions one was educationally, two occupationally, and four socially paralyzed. The majority, 25, came from good homes. Four of these children were in the educationally paralyzed group, six in the occupationally and 15 in the socially handicapped class. Of the two children whose homes were excellent, one was socially handicapped and one was the most completely paralyzed case visited. Information as to the home conditions was not available in twelve cases.

The comparison of the home environments of those children who were not paralyzed with that of those who were may be enlightening. There were 45 of these children who were left without permanent handicaps and of this number one came from a very poor home, five from poor, four from fair, twenty-seven from good and eight from excellent homes. This comparison shows a marked decrease in paralysis with the improvement in the home environment.

When the present treatment of the children was examined, it was found that 51 of the 60 are now receiving therapeutic treatments. Hospital clinics are giving care to 36; over one-half. Mothers, under the supervision of visiting nurses, are caring for ten children. This generally means that the mother massages and exercises the child every day and the nurse bakes the paralyzed part once or twice a week. The nurse alone cares for four children, and the mother alone for one and visits the hospital for supervision every three months.

This study reveals the far-reaching social consequences of this disease in that it leaves so high a proportion of the children more or less handicapped for life. The examination of the economic status shows that relatively few of these families could have provided the expensive and prolonged care needed for the medication of poliomyelitis. However, it is evident also that, owing to the thorough organization of the hospital service in Boston, a large majority of these children are receiving supervised and careful after-care.

CASES OF POLIOMYELITIS REPORTED IN BOSTON JUNE 1 TO OCTOBER 1, 1931, DISTRIBUTED BY AGE GROUPS, SEX AND NUMBER PARALYZED

Age Group	*Both Sexes*		*Males*		*Females*	
	Total	Number Paralyzed	Total	Number Paralyzed	Total	Number Paralyzed
All ages	137	60	80	32	57	28
Less than 1 year	4	0	3	0	1	0
1-4 years	44	25	29	16	15	9
5-9 years	61	25	33	12	28	13
10-14 years	17	6	9	3	8	3
15-19 years	5	3	2	0	3	3
20 and over	6	1	4	1	2	0

NEW ENGLAND MEDICAL COUNCIL

Harvard Club, Boston, Mass., October 11, 1932

DR. George Blumer, President, called the meeting to order at 11 o'clock.

Dr. Bowers, Secretary-Treasurer, reported that the records of the last meeting had been published and sent to each member of the Council.

Upon motion duly made and seconded it was

Voted: That the record of the last meeting as printed be accepted as the minutes of that meeting.

Dr. Bowers stated that the expenses of the last meeting, including personal expenses of the members who attended, were $459.11, and read some of the details which made up the total, and upon motion duly seconded it was

Voted: That the report of Dr. Bowers be accepted and placed on file.

Voted: That the Chair appoint a Nominating Committee of three, or four, or five as he sees fit to present a list of officers for the ensuing year.

The President appointed as Nominating Committee Dr. Bryant, Dr. Luce and Dr. Bowers.

Dr. Blumer stated that Dr. Ellingwood had a message from Dr. Cary, President of the American Medical Association, and asked him to speak.

DR. ELLINGWOOD: *Dr. Blumer and Members of the New England Medical Council*—It was my pleasure to see Dr. Cary, President of the American Medical Association, at Burlington, last Thursday and Friday at the Vermont State Meeting, and then on Friday to have a visit with him as he accompanied me from Burlington to Dartmouth College. While in Burlington he brought up the subject on which he was working very hard at that time, relative to the activities of the Veterans' Bureau in caring for the medical needs of Veterans. As we all know, the veteran has, lawfully, medical service free of charge, and a great many of them take advantage of this although well able to pay for treatment. The Veterans' Bureau is not only taking the veterans away from our local hospitals and our local doctors, but it is also taking care of cases the conditions of which are not attributable to service in time of war. The number of these cases is increasing to such an extent that in all probability it will be necessary for Congress to appropriate large sums of money for further construction of hospitals for the care of these cases.

Dr. Cary and some others are accumulating data tending to show that it is possible for veterans to get service fully as cheaply if the government would appropriate its money, not for the construction of more hospitals, but to meet the cost of care in local civilian hospitals, where these persons would prefer to be, and be treated by their own doctors, at government expense. He feels that the money invested in new construction work together with transportation charges would equal or exceed the amount that it would cost to have the individual taken care of at home. It would be necessary to have some stipulated fee, because a great many men would take advantage of this provision inasmuch as the government would pay all bills.

Dr. Cary is arranging a meeting with General Hines in Washington and they are going to try to propose appropriate recommendations. If they come to any practical conclusions, the State Medical Society Secretaries will be notified and they in turn will notify the subordinate Secretaries, county or district, as to what is being done. Dr. Cary feels that if anything can be done this is the proper time to take action; and as soon as we get any knowledge of how to deal with the problem we should get in touch with our Congressman and try to do something to keep the Government from developing, more and more, what can be appropriately termed "state medicine". He said that they have nothing tangible as yet, but he asked that I convey this message, as well as his good wishes, to the New England Medical Council, that we might have it in mind and, if anything requiring action is devised, we ought to unite in such plans.

DR. BLUMER: Does anybody wish to remark on this? Do you wish to take any action?

DR. BRYANT: The problem of the hospitalization and care of Veterans of the World War is of the greatest importance to the medical profession. At the meeting of the House of Delegates of the A. M. A. at Philadelphia a committee was appointed to consider the subject and did a large amount of work, reporting at the last meeting. At the present time in the Veterans' hospitals already constructed, over fifty-four per cent of the inmates are service men whose disabilities have no connection with their period of service. Anyone, regardless of his financial standing, who served three months can go to any government hospital and receive not only free medical and surgical treatment, but compensation for the time of disability. This, notwithstanding that his own local hospital is run-

ning at only 50-75 per cent capacity. It takes the man from his own hospital, deprives his own physician of his fee, and costs the government more than if he were cared for at home by his own physician in his local hospital. It seems to me that this is one of the matters that should have the closest consideration.

In the last Congress a bill was introduced providing not only that the veteran, but his entire immediate family as well, should receive free medical and surgical service and hospitalization. If something is not done to stop this special class legislation it will continue as long as it is of supposed political advantage to those members of Congress who are advocating it.

I think we have a promise from the Veterans' Bureau that they will not push for the construction of more hospitals. Whether there will be any retroactive movement in Congress, or whether new legislation permitting service men to be cared for in their own neighborhoods will be enacted, or just what is going to happen, we do not know. You can see the enormous amount which is being taken from the pockets of the physicians and services of the hospitals already constructed, who are perfectly able to handle the whole situation, and what it is going to mean to the medical profession if it is allowed to go on permanently. Not only are we deprived of opportunities for practice, but we are taxed to support this unnecessary, pauperizing service as well.

DR. BLUMER: Do you think it is desirable for us to put ourselves on record at the present time as to this?

DR. BRYANT: I don't know.

DR. CALL: In line with this same subject of veterans is the present tuberculosis situation in Maine. There is a step on foot to utilize the vacant space in the hospitals for ambulatory cases of tuberculosis that are free from tubercle bacilli in the sputum and abnormal temperature for a month or two, cases that need further rest cure, under an expense of two or three dollars a day. The utilization of these accommodations and the care of our present waiting list is being discussed. I think it proper to utilize the hospitals that have already been built without going to the enormous expense to the government of further construction.

DR. SULLIVAN: Don't you think it would be well for the Council at this opportune time to send a telegram to Dr. Edward H. Cary, President of the American Medical Association, protesting against the continued aid of the government to the soldiers of the World War for surgical or medical services for disabilities of non-service origin? I believe that is the important point. While we thoroughly believe in rendering all possible service within reasonable limits to men for disabilities received in service, the chief concern of the medical profession and the laity is what some of us term "pauperism", that is rendering aid for cases that have no connection with service to the country in time of war.

DR. BLUMER: Do you make that as a motion, Dr. Sullivan?

DR. SULLIVAN: Yes, I will so move.

Motion seconded, and carried by vote.

DR. BLUMER: We will now proceed with the regular program, which is a discussion of certain aspects of postgraduate education with especial reference to the treatment of fractures. Dr. Scudder will give the opening address.

DR. CHARLES L. SCUDDER*: *Mr. Chairman and Gentlemen*—I first want to thank this Council on behalf of the Committee on Fractures of the New England Surgical Society for the opportunity of being present. We feel that it is an important occasion, our coming before this group so vitally interested in the good of the general practitioners throughout New England.

I would like first, if I may, to state briefly a situation which I suppose is very familiar to all of you, namely, that the results following fracture treatment throughout New England, and the United States for that matter, are generally poor. They have been worse, but they are now very far from being satisfactory. Results so poor have attracted the attention of industry. Since the functioning of the Compensation Act, industry is demanding of us, as a profession, that these results be made better.

Of course there has always been a move from within the profession to improve the practice of surgery, but it is more or less dormant in connection with certain branches.

Injuries received by workmen while attending to their jobs, are now compensable. The result of injury to the workman is estimated in dollars and cents. It is, therefore, of very great economic importance, not only to the workman and to the employer, but to the surgeon in care of the case, that the result be the best possible. These remarks will serve perhaps as a background for what I should like to say leading up to the problem that I will present to you from our New England Surgical Society Committee.

The general practitioner, to whom Dr. Rappleye's Commission on Medical Education has referred, is to a very large extent carrying on in the community in the practice of minor surgery. He sees fractures. The general practitioner will always, in my opinion, take care of most fractures in the first instance.

As a matter of fact, the fracture situation is such that it is attracting attention not only because of the poor results and the great economic loss to industry, but because the general practitioner will usually care for those injuries in the first instance. Therefore, the carrying of instruction to the general practitioner in the

*Scudder—Consulting Surgeon, Massachusetts General Hospital. For record and address of author see "This Week's Issue," page 1221.

immediate emergency care of these injuries is of paramount importance.

Undergraduate medical instruction is being supervised with regard to the fundamental principles of fracture treatment. Graduate and postgraduate instruction of internes is being attended to by authoritative committees. At the meeting of the American College of Surgeons in St. Louis, recently, an important committee considered the question of undergraduate and graduate instruction in medical schools. We know that the work of the educational committee of the American Medical Association is of very great importance. We also know of similar interest in the Association of American Medical Colleges, including the work of the Medical Commission which Dr. Rappleye and Dr. Anderson represent. There is throughout this country and especially New England a very keen interest in all these educational steps.

A word in regard to graduate instruction. The American Medical Association has for a number of years conducted at its annual meeting a demonstration of simple methods of treating certain fractures, in a series of booths under the supervision of the late Dr. Nathaniel Allison, Dr. Darrach of New York, Dr. Speed of Chicago and a consulting group. The American Medical Association now publishes a reprint of these demonstrations relating to the treatment of simple fractures. This reprint has a large circulation.

Ten years ago the American College of Surgeons, recognizing the fact that fractures were often very poorly treated, established a fracture committee of twenty men representing different sections of the country. The object of this committee is to improve fracture treatment. The committee has grown until now it includes about forty men.

One of the methods of this committee, operating throughout the United States and Canada, is to establish regional small local groups. There are about twenty-seven such groups today. The total number of men in this committee is three hundred, all interested in fracture treatment. These groups have been carrying on in various educational ways.

To give you a picture of what has been done the committee has an educational group, a special committee, Dr. William Darrach, Chairman, Dr. Cohn of New Orleans, Dr. C. R. Murray of New York, Dr. G. A. Leland, Jr. here in Boston and Dr. Tees of Montreal. That committee has approached the Class A medical schools and talked with the professors of surgery and attempted to put over the committee's conception as to the handling of this subject in undergraduate schools. This move has borne fruit.

The graduate teaching is also under the immediate care of Dr. Cohn of this committee and we are developing it wherever possible in connection with clinical work in various centers. Graduate teaching is done here in Boston, in New York City, Philadelphia, etc. We have found that even in its simplest form, it does not reach the men who should have it. Many men cannot come to the center, they cannot afford the transportation or take time away from their work to attend courses for a period of ten days, or even a shorter time, to witness demonstrations of fracture treatment. I will not weary you further with all the details of the work of this fracture committee, which has many phases.

The American Red Cross is just publishing its Handbook to which this fracture committee has contributed the chapter on the emergency treatment of fractures.

The committee on ambulances and ambulance equipment, working through Dr. Robert Kennedy, Chairman, has been instrumental in having placed, in New York City, Thomas splints in every ambulance. The same thing is happening in Philadelphia where Thomas splints are also being introduced in all ambulances. There is a move throughout the country to inform the ambulance organizations which now exist as to the value of having this emergency equipment. We do not want to upset existing ambulance organizations but rather strive to help them.

You will be surprised to know that the embalmers and funeral men's associations throughout the West and South run the ambulances of the various cities. You can always get an up-to-date ambulance from an embalmer or funeral director. There is a National Association of Embalmers. We are hoping to get it to coöperate with the doctors by carrying emergency splints.

I have just returned from Oklahoma after ten days' work with the Extension Service of the University of that state, talking in seven or eight places on Cranial Injuries. This experience opened my eyes to what may be done in reaching doctors and exhibiting simple methods of treating certain fractures. I might say that during the last four or five years, since the University of Oklahoma has been carrying on in this way, going to the doctor with methods and carrying medical instruction, that the demand for the courses which have to do with injuries and fractures has increased very materially. Doctors are appreciative of these opportunities.

The development of graduate teaching is a general move which is already well under way. It has been developing for some time. Our committee of the New England Surgical Society, consisting of Dr. Arthur Allen of Boston and Dr. Robert W. Graves of Concord, New Hampshire is convinced that New England, these six states, should demonstrate to the rest of the country what can be accomplished here by a carefully thought-out plan to carry instruction of fracture treatment to the doctors of this section. The reasons for the move are apparent.

Our committee believes that any plan to carry instruction to the doctors of New England should be well thought out in every detail, and should be carefully supervised. Mr. Kibler, the

Director of graduate medical study of the University of Oklahoma, was very enthusiastic when I outlined what we contemplated. He said he would like to carry out the plan in Oklahoma. I told him that we were just getting under way and as soon as we had definite details we would communicate with him.

The Committee of the New England Surgical Society recognized the fact that it would cost money to put any plan into operation; it therefore approached a Foundation which has a liberal-minded Board. I knew that this organization was very much interested in the teaching of medical men in rural communities. It is also interested in graduate teaching.

The Committee of the New England Surgical Society would like to enlist the sympathy and the active coöperation of the New England Medical Council in our plan. That is why I am here.

The plan briefly is this: The committee believes that two competent men, preferably graduates from a hospital, who must be well-qualified and interested in fracture work, should be employed at a minimum salary of possibly $5000, and that perhaps they should be given Ford cars, and should carry two Thomas splints, for the upper and lower extremities; that they should have all the paraphernalia which your committee, if you approve eventually, would determine, including a view box, a movie film or films, x-rays, data, figures and facts. This is a brief outline of the minimum which those two men ought to carry when they go into the country. The committee of the New England Surgical Society should supervise this equipment with your approval.

Maps of the whole of New England should be marked with the itinerary of these men Your committee suggests that possibly, for one year, these men will be occupied in going over the six New England States. How will they proceed? Each state will be diagrammed with the coöperation of the president and secretary of the state medical society. The places of meetings will be arranged. Let me say that we want to meet the men who don't attend society meetings or medical centers for study. We want to reach that group as well as the doctors who do attend, because it is the former group which especially needs instruction.

After planning the itineraries, the two men employed will carry on along the line worked out and will finish in time to make their report at the end of the year, supplementing this final report by preliminary monthly progress reports. You would be asked to coöperate by visiting meetings and checking up on the work and by making suggestions to the committee of three. In other words, we would at the end of the year expect that the emergency treatment of fractures had been demonstrated to all New England doctors. We should have a report of the work edited and widely distributed.

The emergency treatment of fractures is standardized therefore, we can say to the doctor in the country: This is the best method of caring for a fracture of the long bones. It was proved in the war; it has been proved in ambulance service throughout the country, and this is the way to deal with these injuries. These doctors will be shown the use of the Thomas splint for the lower extremity and the Thomas-Murray splint for the upper extremity.

In the emergency care of fractures certain things only are to be stressed: that the patient with a fracture of a long bone must have such care that further injury is not sustained by that individual. This is the background of the rationale of the treatment. In order to be protected from any further injury he must not only have immobilization, but traction. The only way to secure traction is by the use of the Thomas splint. As is so often the case in transporting a patient, the individual will not be "jackknifed" and the fracture complicated by the added injury. It will be emphasized that such protective treatment at the outset makes the subsequent care, according to the generally accepted methods of treatment, comparatively simple.

During the meetings there will be opportunities for questions and advice about any case which may be bothering the local doctor.

The other day I went to Providence and spoke at the summer meeting of the Rhode Island State Society, and one of the questions was this: Are you going to have these men speak of the emergency care of fractures only? I said, "That is the plan as contemplated, but it doesn't preclude the possibility of taking on some of the simple forms of treatment if there is time." We do not want to develop controversy, nor spread out too thin in this first method of carrying instruction to the country practitioner in this subject.

I may say to you that we have in written form the approval of every New England State Society in this movement. We have secured from the Council of the Massachusetts Medical Society a statement of interest and a contribution. "That the Council hereby indorses the plan for postgraduate instruction in the treatment of fractures of the Fracture Committee of the New England Surgical Society, as outlined to the Council this day by Dr. Charles L. Scudder of Boston, a member of that committee, and that a portion of an appropriation not to exceed $500 to the new Committee on Postgraduate Medical Instruction, be devoted to the furtherance of the program of the said fracture committee, in the State of Massachusetts."*

That, gentlemen, is the subject which the committee of the New England Surgical Society presents to you at this time—The presentation to the doctors of New England of an approved

*Proceedings of the Council, June, 1932.

first treatment of fractures of long bones. We believe it is the most vital subject which could come before this body. We are tremendously interested in doing constructive, helpful work along this line of graduate instruction. We ask your coöperation.

DR. RICKER: *Mr. Chairman*—May I say that the Vermont State Society has just voted $500 for this work.

DR. BLUMER: I will ask Dr. Anderson to continue this discussion.

DR. ANDERSON: *Mr. President, and Members of the Council*—I am quite sorry for your sakes that Dr. Rappleye could not come to Boston, but for my own sake I am quite glad to be here this morning and hear this interesting proposal of Dr. Scudder. I don't want you to think I have been engaged in the work that Dr. Rappleye has been doing; so I cannot tell you all that he has found out in the last few years about general practice throughout the country. As you know, he was a member of the Commission on Medical Education, and the report of this Commission will come out very soon.

However, I am interested in this graduate, postgraduate and rural work in fractures. Dr. Scudder has told you of the plans that have been carried out for the past ten years by the American College of Surgeons and its committees, and we are all glad to acknowledge the lead he and the members of the Massachusetts General Hospital have taken in this field. I think this is the best piece of postgraduate training we have had in surgery, or as a matter of fact in any other department.

I want to tell you a little about what we are doing in New York. The New York Regional Committee of the American College of Surgeons, among other things, has a course of a week each year in fractures. We have about twenty students each year. They take up the fundamentals of the work and don't go into the more detailed operative work. At the New York Post-Graduate School, now a part of Columbia University College of Physicians and Surgeons, we also have a short course of a week in fractures; about twenty-five men were in that course last year.

The most interesting work, I think, is done by the men actually in the surgical game. We have had meetings of the New York, Boston and Chicago groups and have, for a few days, clinics on fractures at some of the hospitals, as you do here. A number of the men from the surrounding country come in and they get a great deal of good from these meetings.

I will not say anything about the formal courses we have had. There again you have here in Boston the best course in fractures I know of, the nine-day course at the Massachusetts General Hospital. In New York State we have done very little. We have sent out teams of about six men each year who talk at the county medical meetings. They have covered a number of counties, but these are mainly talks on fractures and not in the nature of clinics.

Although Dr. Scudder has painted a rather bad picture of fracture treatment, I think we can say it has improved a great deal in the past five or six years. I was talking with Dr. William Darrach recently, and he told me that he had been amazed at the number of men who have come to the educational meetings, and the interest that they have shown in the Thomas splint, putting on plaster bandages, and in the fundamentals of fracture work. That is all encouraging.

This morning we have had outlined to us the next step we ought to take. I feel sure this Council will take the step; that is, go out and teach the doctor who is not reached by other means. Again, I think that this is the ideal form of education for the doctor, if we can provide it. If we could get, in every branch of medicine, capable men to go out from the cities and hold clinics and teach the fundamental principles of medicine, I think in a few years we would raise the level of medical practice. However, we have very few men willing to engage in this scheme and give their time to this work, and it is to men like Dr. Scudder that we must look. I feel that he and the men who are interested in this fracture work ought to have the backing of all of our university medical schools and our medical councils. I believe that this plan will be put into effect, and we in New York and elsewhere will be watching it with interest; and I hope we will have the courage and industry to follow the lead.

DR. BLUMER: Dr. Ober of the Harvard Medical School will continue the discussion.

DR. OBER: *Mr. President and Members of the New England Medical Council* — Dr. Scudder has covered this matter very thoroughly. The American Medical Association appointed a Committee on Fractures at the Dallas meeting several years ago. The Committee was made up of three members — Drs. Allison, Speed, and Darrach, with an advisory committee. The object of this organization was to give simple and graphic education in the treatment of fractures to those visiting the general meetings of the Association. It was hoped, when this committee was organized, that some part or all of this educational work would be carried to the constituent county societies as time went on.

There are many difficulties in treating fractures in rural communities, because the same rules do not apply there as in urban communities. For example, it is easy to consider the advantages of standardizing fracture treatment in the cities where one has every facility at hand. The same is true of the operative treatment. In the country conditions are different, for no one would expect a country doctor to nail a fractured hip, and probably many are

not accustomed to putting them up in the Whitman position in a plaster spica. There are simpler methods which can be easily taught.

The whole problem of graduate teaching must be revised in order to reach the graduate, since the present methods reach only a few. There is an inertia among medical men when it comes to obtaining more knowledge. This may be due to several factors the most prominent of which is his inability to leave his practice. If the practice cannot be left, then the school must be taken to the doctor. The scheme which Dr. Scudder proposes will take our subject to the doctors in a very simple and efficient way, provided the right sort of men are to do the teaching. One of the other weaknesses is that for years there has been no question on fracture or treatment of fractures in the examinations of the Massachusetts Board of Registration in Medicine. Dr. Osgood told me last spring that the Massachusetts Board knew about this and was going to put in at least two questions on fractures.

I do not believe we ought to limit the medical extension graduate teaching to the subject of fractures. In order to get the men interested, you have to cover all the things the men find of interest in their own practice. My idea is that if we are going to organize New England, we ought to get it organized so that every medical school in New England is interested in graduate teaching; and there should be a committee from these medical schools to formulate a plan of graduate teaching. This plan ought to include the universities, the medical societies (state and county), the surgical societies, and all the other medical societies and clubs that are interested in teaching, and get them to coöperate so that we can send out propaganda to the men all over New England and organize New England into a region of graduate teaching in order that we can take care of all the problems of the average practitioners that are being brought up today.

The American Medical Association plan was relatively simple. You will be interested to know that in all those exhibits which we had (Washington was the first), and we had one every year, there were four to five thousand men who visited those booths and saw how the common fractures were treated. The whole body was studied, including fractures of the skull. That is very important from the neurological point of view on account of the injuries due to automobile accidents.

DR. BLUMER: Dr. Greenough, have you something you would like to say on this subject? I know you were not present when the paper was read.

DR. GREENOUGH: I understand that Dr. Scudder has made no material changes in the plan for postgraduate instruction in fractures which he presented at the Council meeting last June. That plan was developed as a means of carrying instruction to the physician at or near his home, in contrast to the postgraduate clinics and courses given in some more distant medical center. Undoubtedly the different branches of medicine will require different methods of postgraduate instruction, and undoubtedly a number of other subjects will be found which can be taught effectively by this method devised by Dr. Scudder. At any rate, the experiment, if we can call it such, is one that may prove of considerable value.

I am also impressed with the fact that postgraduate instruction, in general, is desired and is obtained by the better men in the community (who, perhaps, are least in need of it). They are willing to take time off from their practice to attend courses in other cities, or to have extension courses brought to them. In smaller communities, however, practice is more highly competitive and physicians hesitate to be absent even for a short time. The matter of interesting these physicians in smaller communities, and men of the same general standing in the larger centers, and to persuade them to take an interest in postgraduate instruction, is, I think, one of the big problems. Dr. J. W. O'Connor, of Worcester, one of the members of our committee, has made a suggestion which to me seems of very considerable value, and that is the formation of local medical clubs which would be definitely directed toward postgraduate instruction and medical improvement. I believe such organizations could be established in many of the smaller communities, which would stimulate interest in this subject and make physicians more receptive than they are at present to the various forms of postgraduate instruction. This again appears to me to be an experiment worth trying.

DR. BLUMER: The subject is open for discussion. Dr. Parkins, have you something to add?

DR. PARKINS: It is a pleasure to add my word of approval of Dr. Scudder's idea of taking such instruction to the doctor. I am not a surgeon, I practice medicine, but I think that we are all concerned with what happens in emergency accidents. I am very much interested in the whole field of postgraduate instruction, and I have asked many doctors outside the cities why they don't visit medical centers to obtain such information. They usually have a perfectly good reason for not going to the cities to take graduate courses; it is largely financial and they cannot afford to take the time. One doctor, 15 miles from the capital of one of the New England States, showed me his cash record and said, "Look at my books and see how my practice has dropped." It was 33%. He said,

"I would be glad to go to Boston to take a medical course if I could afford it, but I am losing money now." Then he stated that if the course were given within twenty-five miles of his locality that he would gladly take time to attend. He was a bright fellow and he knew, from an unfortunate experience involving a fracture of the humerus, the need of more instruction. I felt sorry for this physician, but had nothing practical to suggest. He asked me what he should do. I asked him if he had even a book on fractures and he said that he had not. I recommended Dr. Scudder's book.

I am the secretary of the committee of which Dr. Greenough is chairman, and we are very desirous of finding out what type of medical education doctors need. This committee of the Massachusetts Medical Society on postgraduate education considers that the proper way to approach the subject of educating physicians is to ask what type of education they prefer. Doctors as a group are intelligent, far above the average in experience, and they wish to be consulted about what is to be given them in the way of instruction. It is not feasible to force anything upon them. At present we have no definite plan, but we will eventually have one and put it across. I feel very confident of this as we have the right men interested; the officials of the Society are enthusiastic about the idea and the Council of the Massachusetts Medical Society has during the past year seriously considered the whole subject of postgraduate education.

The first consideration about such a proposition is to know if it is fundamentally sound, and whether it is worth while. I feel that Dr. Scudder's plan is fundamentally sound and that it ought to be adopted. It is intrinsically a good investment to increase one's ability and I believe that most of us are willing to pay a modest fee for such help.

You will be interested in an experience that I had two years ago. I was concerned with helping doctors to help themselves, and was talking about various aspects of its community value to a layman who is a well-known attorney in a neighboring state. He immediately adopted the idea and wanted to secure some large financial backing. He also wanted to take it up with the New England Governors' Council. At that time he and I talked to one of the New England governors, also a former governor, both men well informed on educational affairs. They were agreeable to forming a laymen's committee of prominent men in New England to help start such work. Some at first had the idea that doctors could be forced by public opinion into educational work to keep informed of the latest advances in medicine. Their general feeling was that the effort should start within the profession, then the lay public would be glad to help financially because of the obvious direct community benefit from such a movement. From my experience with these men I feel certain that this New England Medical Council could approach the Governor's Council and get such moral and financial support as is necessary to provide ways and means of bringing the best in medical education to every doctor in New England. It is high time that we physicians took the lead in showing the way toward better community health.

DR. BLUMER: Dr. Allen, we would like to hear from you on this question.

DR. ALLEN: *Mr. Chairman and Gentlemen*— I think in New England we are particularly fortunate in having a man of Dr. Scudder's enthusiasm and ability to put before us a concrete plan for the teaching of the treatment of fractures in rural communities. I do not believe we fully appreciate Dr. Scudder in Boston and New England as we should. Very few of us realize how much time, how much energy, how much thought he has put into this subject of the better treatment of fractures throughout the country, and how his opinion has been respected and sought after, all over the United States on this particular question. We have him in our midst. He has worked out this experiment as Dr. Greenough has termed it, and it is an experiment to be sure. However, it appeals to some of us who have given it much thought as being a feasible, workable plan. It would seem rather too bad not to give this experiment a chance, not to try it, because if it fails I believe then the question of graduate teaching in New England will be a greater problem than ever. I believe if it succeeds as well as some of us think it will, then we will have a basis from which we can work along other lines of graduate medical teaching. I think it would be a great mistake, in trying Dr. Scudder's plan, to combine it with any other instruction. It would be a mistake, for instance, to have a group of men go out together and lecture on different subjects.

I think we must ascertain whether the members of local medical societies are interested enough in this problem of trying to improve their methods of treatment in one particular subject. Later on combinations might be considered, but my own feeling about it is that it would be a mistake to try to send out a lecturer on obstetrics and one on pediatrics, etc., in conjunction with this fracture program. We have thought out a good many of the details which could be used in this type of teaching. However, the committee has an open ear for suggestions and I know of no better group than this Council to help us in forming a course which will be of the greatest benefit to the community.

These lectures which we hope are going to be carried to the local community will be more or less stereotyped. The man who is going to

carry them, although a well-trained man in fractures, is going to be told what to say. He will be given an exact outline, which is going to cover certain simple methods in the treatment of fractures, and will not be a complete course in fractures in an hour, or anything like it, but if we can get across the one idea of emergency splinting and show them how to use these splints, the work will be worth while. We hope that what these paid teachers are to say in their lectures will be arranged by the Council and the local committees in conjunction with the New England Surgical Committee. We want to stress the fact that we think we can get across a definite line of treatment to these doctors which we believe they can adopt without any difficulty, and will welcome as more simple and better than their present methods.

DR. BLUMER: The question is now open for general discussion.

DR. DAVIS: *Mr. President and Gentlemen*—As Secretary of the Maine Medical Association I had some correspondence about this matter, but as our State meeting comes in June I could not get any response from the Association. At a recent meeting of our Council there was no opposition to this plan, but it was felt that at this time we could devote no money to its support. I have no quarrel at all with this movement, but I would like to say this: I don't believe the general practitioner wants to be educated along these lines. He may need it. I have for 27 years served on a hospital staff and my experience goes back to the days before we had the x-ray for diagnosis of fractures. I had charge of general surgical wards before any separate orthopedic service for fractures was instituted. I remained in touch with hospital work until special orthopedic services were instituted, and in looking back, as far as functional results go, and as far as fractures are concerned, it seems to me that by and large over a long period of time, fractures in the hospital were very well taken care of. I feel that when the orthopedists took over fracture work, if they fell down at all, it was in failing at times to recognize other injuries, and by keeping their fracture cases too long hospitalized. I think that is on account of their training. The orthopedic case generally is long continued and time doesn't seem to mean very much to the orthopedist. Of course Dr. Scudder has said that this plan has not been worked out in detail, and I would suggest that so far as possible each state carry on, by representatives from its own state, in dealing with postgraduate study. I recognize that such a plan must have the backing that can be provided by such men as Dr. Scudder. I have been impressed with the fact that we are taking care of fractures pretty well in Maine; perhaps we need this teaching as much as others. However each state should stimulate its own hospital centers to interest their own men in fracture work. I believe in self-development. I believe in calling for help from outstanding men when needed, but as I see it not only in fractures but all kinds of practice, I think we are all in danger of becoming good listeners and not doing things to help ourselves.

DR. BRACE PADDOCK: *Mr. President and Gentlemen*—For many years I have lived in the wilderness of Western Massachusetts. I have always been interested in the matter of bringing education to the doctors because there is often a group who will not go to medical centers for study but who are perfectly satisfied with their own attainments. The question has been brought up here as to the matter of the education of a man graduated from a first class medical school. It is a question of what he is ten or fifteen years after graduation, and that is a very difficult thing to check up. In the past several years, through the courtesy of the Harvard Medical School, we have had some very inspiring men come to Pittsfield and give a series of lectures on various medical subjects. I should say about fifteen per cent of the men in the county have attended these lectures and it is not very easy to interest them. I think this suggestion of Dr. Scudder's is particularly excellent both of itself, and also as an entering wedge, and I hope the plan may be carried through. In order to accomplish this, some men in the community must put their shoulders to the wheel, and stimulate interest and secure results.

DR. RICKER: I am afraid Dr. Scudder was a little disappointed in his correspondence with me. However, I think we in Vermont have shown that we are interested. In speaking of postgraduate instruction in general, Dr. Ober reminds me of a saying I heard long ago in regard to disseminating instruction, "don't try to teach a student what he cannot learn;" and to that might be added, don't try to teach him what he does not want to learn. For instance when the improvement in the treatment of diabetes was developed, the men wanted to know all the new things about it but speakers covered the ground so completely that it was evident that in the discussion of blood chemistry such fine points were involved that they might just as well not have been set forth. Now, this is a tangible proposition that Dr. Scudder has brought before us. People are breaking their bones and doctors are having to fix them. I am a little bit sorry that it is the intention to make the instruction so standardized. My observations are that physicians don't take medical statements which are given too arbitrarily, always, as a matter of fact. Of course many things are quite well standardized but there is usually a difference of opinion.

So far as one suggestion offered him goes, I must disagree on the formation of independent medical clubs. I think in our country

places we should stick to our State and County associations, at least so far as Vermont is concerned. Someone has remarked that the average doctor doesn't wish to be educated. I don't agree with that. He wants to be educated along the lines in which he is interested. The doctor doesn't desire education along the lines in which he is not interested. What I want to tell Dr. Scudder is that Vermont is ready to receive him at any time when he will come. I had an intimation of what was coming and I said to our State House of Delegates that it was going to cost somebody some money and we had better be prepared to help out. So we made an appropriation of $500; and in connection with that it was suggested that if more money were needed the county societies should add to the appropriation. So far as postgraduate medical instruction goes, we have been carrying on in Vermont; we have had in two different years a set of postgraduate lectures, one maternity and emergency welfare, and one last year on cancer work. We have eleven societies in the State and I think we can cover the State in ten county society meetings. Dr. Hyatt and I have talked over this tentative scheme which is subject to change as may be seen fit. When you are ready, come up and give the material that you have to the county societies at ten different meetings. We are very glad to receive any man fresh from hospital work, but I would like to see that finished with a first class symposium with leading men of the nation at the State Meeting. For our state meeting in October I would like to see a whole half day symposium on fractures, headed by Dr. Scudder and Dr. Ober, with three or four men of national reputation, so that our members will take notice and realize that they are listening not to the echoes of authority, but to authority itself.

DR. BLUMER: I will ask Dr. Scudder to close the discussion.

DR. SCUDDER: *Mr. President and Gentlemen*— This open discussion has developed many suggestions which are interesting to the committee and are constructive, but I suppose that this is not the place to take up the details of these suggestions now, because we are only beginning to assemble details and we hope by contacts with each of you gentlemen and those in your various states, that we may secure more information of the same sort which may be helpful.

But may I say briefly as Dr. Ober referred to the fact that very few questions on fractures are asked by the State Board of Registration in Medicine in their examinations; the Committee of the New England Surgical Society has very carefully gone into that matter and I have made contacts with the National Board of Medical Examiners all over the United States, and we have the approval and coöperation of that body as shown by the fact that they are to put in all of the examinations given throughout the United States three questions on fractures. Moreover, we have a sub-committee of our general committee which has in hand and is now working on the underlying fundamentals which those questions are to cover. We found the questions on fractures which have been very desultory and irrelevant for a person seeking to be licensed, that such questions were beside the point, and therefore we have a sub-committee with Dr. Cohn of New Orleans, as the moving spirit, which is about to present to our group the fundamental and leading principles which should underlie all those questions, and we hope to have illustrative questions forwarded to each of the examining boards throughout the United States to cover this matter which Dr. Ober has taken up.

QUESTION: Would it be possible for the Board of Registration to have a practical examination? I wonder if it would not be possible to have these men take a common emergency fracture of the humerus or femur and give a demonstration.

DR. SCUDDER: I think that is a practical suggestion that can be followed if we can secure the coöperation of the State Boards. The answer might be, wouldn't the National Board of Medical Examiners to whom it should be presented first for their approval want to introduce so many other subjects, that it would make an impossible demand? I will make a note of this and we will take it up with the National Board of Medical Examiners.

DR. DAVIS: My statement was that the general practitioner does not wish to be educated in fracture treatment. We want all the education we can get, but the general practitioner is not demanding education in fracture treatment although he may need it. That is what I meant to say.

DR. SCUDDER: As I understood it your statement was, in order to put over the point, that whereas this general move was desirable, perhaps in Maine it was undesirable.

DR. DAVIS: Not that it was undesirable, but I was trying to express my opinion that the general practitioner is not interested in being educated in fracture work.

DR. SCUDDER: In conclusion I would like to express for the committee my appreciation of the opportunity and the courtesy of having been invited to come here to state what our plans are. I agree with everything that has been said in general, and I believe with Dr. Allen that this is a move to carry medical education, to the men in the country, and in the city a move to teach all medical groups. It is a plan to carry education in fracture treatment to these groups. It is a tentative plan. It is an entering wedge

for further development of graduate teaching along other lines. I believe with Dr. Allen that if this body, if you as representatives of the New England States and of the State societies here, approve of this scheme in general, as your State organizations have already done, and will coöperate with this group it can be put over.

The suggestion of having a symposium at the end of these courses at state society meetings is a good one and it is possible that might be done. But, if the securing of funds is held up, I would like to have the representatives of the various state societies who are here keep in mind the unanimous feeling of this meeting and the general scheme of the committee, so that if we have to go to the state societies and ask for funds to put this over, even to a more limited extent in total amount, we may have the hearty coöperation of this group under those conditions.

I believe, gentlemen, the men who come to take these courses should pay a small fee. I believe it is to be seriously considered whether a small fee should be charged for such service. I think the men would appreciate it more if they paid a dollar perhaps, or a nominal sum. This could all be arranged by the local societies or groups. They would then feel that they were coöperating in the general movement, and it would help very materially.

The meeting was adjourned at 12:50 for luncheon.

During and following the luncheon a general discussion of the subject of postgraduate education was further participated in by Dr. Scudder, Dr. Ober, Dr. Greenough, Dr. Jones, Dr. Call, Dr. Ricker, Dr. Davis, Dr. Hyatt, Dr. Sullivan and Dr. Parker in an apparent agreement with the arguments presented by the speakers of the pre-luncheon session.

A brief business session followed the discussion and the following resolution as drafted by Dr. Blumer was adopted:

The New England Medical Council in session October 11, 1932, approves Dr. Scudder's plan of graduate instruction in the treatment of fractures by carrying such instruction to physicians throughout New England, and it not only approves the specific plan but hopes that it may be an entering wedge in the development of postgraduate instruction in general. It is hoped that where the economic situation permits, the Medical Societies of New England may feel inclined to back up their approval by cash contributions.

The nominating committee presented the following names of members as officers for the ensuing year:

President: Dr. William G. Ricker of St. Johnsbury, Vermont.

Vice President: Dr. Julian A. Chase, 22 Park Place, Pawtucket, R. I.

Secretary-Treasurer: Dr. Walter P. Bowers, 8 The Fenway, Boston, Mass.

The Executive Committee, including the above-named officers:

Dr. George Blumer, 195 Church Street, New Haven, Conn.

Dr. Thomas W. Luce, 82 Court Street, Portsmouth, New Hampshire.

Dr. B. L. Bryant, 265 Hammond Street, Bangor, Maine.

On motion duly made and seconded these named members were unanimously elected to the offices specified.

The meeting then adjourned.

Following the adjournment of the meeting, the President, Dr. Ricker, called a meeting of the Executive Committee. It was voted that the next meeting of the Council be held in February, 1933, in Boston, and that the subject to be discussed is "Medical Economics." The meeting of the Executive Committee was then adjourned.

WALTER P. BOWERS, *Secretary.*

SEVENTH IN MORTALITY

A recent compilation of the 1930 figures on mortality from tuberculosis and other leading causes in the United States Registration Area shows tuberculosis to be seventh in importance as a cause of death. It has held this position since 1928 when for the first time tuberculosis deaths numbered less than those ascribed to accidental causes. The constant reduction in mortality from tuberculosis, along with the coincident rise in mortality from the "degenerative" diseases, has been responsible for the shift from first place, which position it held until 1912.

Analysis of the figures classified according to sex and age shows that during the 30 years of early adult life, that is, between the ages of 15 and 45, when tuberculosis is responsible for a fifth of all deaths, 55 per cent of the male deaths and 67 per cent of the female deaths from tuberculosis occur. The toll of death is particularly high among young women between the ages of 15 and 30 when almost a third of all female deaths are due to tuberculosis. The importance of the disease is further emphasized by the fact that during these fifteen years of life, 40 per cent of all tuberculosis deaths among females occur.

Heart disease continues to rank as the foremost cause of death, with the deaths numbering more than twice those charged to cancer, which in 1930 was second in importance. Unlike tuberculosis, these two causes, along with nephritis and cerebral hemorrhage, take their greatest toll in the years beyond middle life; likewise, a greater proportion of the deaths from pneumonia and accidents, which were fifth and sixth in importance in 1930, occur at the more advanced ages.—*Bulletin of the National Tuberculosis Association.*

Case Records

ANTE MORTEM AND POST MORTEM

AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

AT THE

MASSACHUSETTS GENERAL HOSPITAL

Published under the direction of

RICHARD C. CABOT, M.D., Chairman and Editor
JAMES H. MEANS, M.D.*
EDWARD L. YOUNG, JR., M.D.
TRACY B. MALLORY, M.D.
RICHARD H. MILLER, M.D.
MAURICE FREMONT-SMITH, M.D.

*Resigned in September, 1932.

FLORENCE M. PAINTER, A.B., Assistant Editor

VOLUME 18

1932

INDEX

CABOT CASE RECORDS

VOLUME 18

1932

The date of publication of any case may be determined from the case number. The first two figures of each case number indicate the volume number, 18. The third and fourth figures give the number of the week, dating from January 1. The last figure gives the case number for the week. For example, Case 18362 is the second case for the 36th week of Volume 18.

Abscess of lung, 18461
multiple, 18111, 18462
perirectal, 18371
Adenocarcinoma of intestine, 18373
of lung, 18141, 18482
of pancreas, 18331
of stomach, 18172, 18282
(See also Astrocytoma, Carcinoma, Chondroma, Fibrosarcoma, Hepatoma, Hypernephroma, Lymphoblastoma, Neurofibroma, Plasmocytoma, Sarcoma.)
Anemia, aplastic, 18402
pernicious, 18422
splenic, 18502
Aneurysm of aorta, 18211, 18431
Aortic stenosis, see Heart.
Aortitis, rheumatic, 18401, 18411
syphilitic, 18081, 18131, 18211, 18431
Appendicitis, acute, 18381, 18472
with perforation, 18232, 18251, 18333
Astrocytoma, fibrillary type, of cerebellum, 18291
Atrophy of liver, subacute, 18471
Brain, degenerative lesions of, probably ischemic, 18382
hemorrhage into, 18072
infarct of, 18361
varix of, probably congenital, 18381
(See also Subarachnoid space, hemorrhage into.)
Bronchitis, chronic, 18241
Bronchiectasis, see Suppuration, bronchopulmonary, chronic.
Carcinoma of bronchus, 18011, 18462
of lung, 18011, 18462
with abscess formation, 18092
of pancreas, 18121, 18521
of prostate, 18202
of rectum, 18203
of stomach, 18151
with perforation, 18062
colloid, of rectum, 18201
(See also Adenocarcinoma, Astrocytoma, Chondroma, Fibrosarcoma, Hepatoma, Hypernephroma, Lymphoblastoma, Neurofibroma, Plasmocytoma, Sarcoma.)
Cholecystitis, acute, with perforation and abscess formation, 18332
chronic, 18332
Cholelithiasis, 18152, 18332
Chondroma of the spinal cord, 18222
Cirrhosis of liver, alcoholic, 18082
biliary, 18152
toxic, 18261
(See also Liver, subacute yellow atrophy of.)
unclassified, 18141, 18481
Cyst of lung, with rupture, 18292
Cysts, multiple echinococcus, of liver, 18242
Deformity, fishbone, of vertebrae, 18491, 18492
Diverticulitis of intestine, 18101, 18142
Duodenum, peptic ulcer of, with perforation, 18541
Dysentery, Flexner's type, 18342
Endocarditis, see Heart.
Fibrosarcoma of pleura, 18452
Fishbone deformity of vertebrae, 18491, 18492
Gall bladder, see Cholecystitis, Cholelithiasis.
Goiter, colloid, chronic, 18312
nodular, 18311
Heart
Aortic valve, arteriosclerosis of, 18161
disease of, with calcification, 18171, 18221
Bacterial endocarditis, acute, 18122, 18162, 18421, 18522
subacute 18231, 18271
Congenital anomaly of, patent interventricular septum, 18522
Coronary disease of, with occlusion, 18112, 18191, 18441, 18511
Hypertensive disease of, 18071, 18081, 18161, 18162, 18221
Infarction of, 18051, 18071, 18191, 18362, 18511
with rupture of the left ventricle, 18361
Rheumatic disease of
Endocarditis
acute
aortic, 18171
aortic and mitral, 18192
aortic, mitral and tricuspid, 18182
aortic, mitral, pulmonary and tricuspid, 18131, 18411
chronic non-deforming
auricular, 18441
mitral and tricuspid, 18171
chronic deforming, with stenosis and regurgitation
aortic, 18401
mitral, 18081
mitral and tricuspid, 18131
aortic and mitral, 18192, 18211, 18441
aortic, mitral and tricuspid, 18182, 18411
Myocarditis, 18081, 18411
Pericarditis, 18182, 18192, 18411, 18441
Syphilitic disease of, with aortic insufficiency, 18131, 18211
(See also Aortitis, rheumatic, syphilitic.)
Hemorrhage
into brain substance, 18072
subarachnoid, 18381
Hepatoma, 18082
Hodgkin's disease, see Lymphoblastoma.
Hypernephroma of kidney, 18141
Intestine, diverticulitis of, 18101, 18141, 18451
(See also Duodenum.)
Kidneys, polycystic, 18512
Leiomyosarcoma of stomach, 18262
Leukemia, lymphatic, aleukemic stage, 18341
plasma cell, 18491
Liver, atrophy of, subacute yellow, 18471
cirrhosis of, alcoholic, 18082
toxic, 18261
unclassified, 18141, 18481
Lymphoblastoma, 18052, 18181, 18252, 18281, 18391
Malnutrition, 18392
Meningitis, influenzal, 18301
tuberculous, 18041
Myocarditis, 18411
Nephritis, glomerular, chronic, 18031, 18522
subacute, 18102, 18122
with nephrosis, 18132
vascular, 18122
malignant, 18032, 18091, 18351
Neurofibroma of spinal cord, 18012
of stomach, 18283

Osteomalacia, 18492
Osteomyelitis of femur, 18382
of tibia, 18302
Osteoporosis of vertebrae, 18491
Pancreatitis, acute, 18332
Periostitis, chronic luetic, 18272
Peritonitis, gas bacillus, 18371
Plasmocytoma, leukemic type, of vertebrae and liver, 18491
Pneumonia, lobar, 18321, 18322, 18323
Poisoning, lead, questionable, 18022
Poliomyelitis, bulbar, 18021
Prostatism, obstructive, 18012
Purpura, thrombopenic, 18031, 18072
Pylephlebitis, 18251, 18472
Pyelonephritis, bilateral, 18032, 18432
Rheumatic aortitis, 18401, 18411
Rheumatic disease of the heart, see Heart.
Sarcoma of stomach, 18262.
Septicemia, gas bacillus, 18371, 18372, 18373
pneumococcus type V, 18352
vibrion septique, 18372
(See also Heart, Bacterial endocarditis and Rheumatic endocarditis.)
Silicosis, acute, 18412
Splenectomy, with complicating mesenteric thrombosis, 18502
Stenosis of heart valves, see Heart.
Stomach, ulcer, of, with perforation, 18061, 18151
Subarachnoid space, hemorrhage into, 18381
Suppuration, bronchopulmonary, chronic (bronchiectasis), 18212
Syphilitic aortitis, 18081, 18131, 18431
with aneurysm, 18211, 18431
Syphilitic disease of the heart, see Heart.
Thrombosis of superior mesenteric vein and its radicles, of portal vein and splenic vein, 18502
of vena cava and iliac veins, 18172
Thyroid, diffuse involution and focal hyperinvolution of, 18311
hyperplasia of, 18311
Tuberculosis of lung, 18482
of meninges, 18041
miliary, 18041
Ulcer, peptic, duodenal, with perforation, 18451
gastric, with perforation, 18061, 18151
Unknown cause of death, 18042
Ureter, constriction of, bilateral congenital, with hydroureter and pyelonephritis, 18432

SPEAKERS IN DISCUSSIONS OR AUTHORS OTHER THAN DR. RICHARD C. CABOT AND DR. TRACY B. MALLORY

Adams, F. Dennette, 18323, 18441
Albright, Fuller, 18042, 18491, 18492, 18502
Allen, Arthur W., 18271, 18472
Barney, J. Dellinger, 18012, 18032, 18231, 18432
Bauer, Walter, 18042, 18052
Beaver, Donald C.,* 18471
Blake, Gerald, 18362, 18381, 18401
Bland, Edward F., 18362
Bock, Arlie V., 18031, 18032, 18061, 18121, 18122, 18142, 18271, 18492
Bradley, John I., 18301, 18302, 18331, 18332, 18333, 18342, 18352, 18392
Breed, William B., 18321, 18401, 18411, 18422, 18472
Capps, Richard B., 18132, 18302
Chapman, Earle M., 18031, 18032, 18121, 18252, 18412, 18472
Churchill, Edward D., 18092, 18202, 18232, 18251, 18332, 18361, 18452
Comfort, Mandred W.,* 18471
Cope, Oliver, 18022
Crawford, Henry B., 18272
Daffinee, Ralph W., 18342, 18352, 18392
Davis, Lincoln, 18242, 18251
Dienes, Louis, 18342
Fish, James E., 18052
Fitzhugh, Greene, 18062
Franseen, Clifford C., 18101, 18142, 18203, 18232, 18251
Fred, G. B., 18501
Fremont-Smith, Maurice, 18021, 18071, 18072, 18081, 18091, 18101, 18111, 18112, 18121, 18141, 18161, 18162, 18171, 18191, 18212, 18222, 18241, 18291, 18301, 18311, 18351, 18391, 18421, 18452, 18512, 18522
Gammon, William M., 18292, 18402
Garrey, Walter E., 18462
Graybiel, Ashton, 18082, 18141, 18182
Halsted, James A., 18031, 18351
Hampton, Aubrey O., 18011, 18092, 18101, 18121, 18131, 18141, 18172, 18212, 18232, 18241, 18252, 18262, 18311, 18411, 18412, 18422, 18431, 18451, 18452, 18462, 18491, 18492, 18522
Harrison, Forrest A., 18192
Hawkes, Richard S., 18381
Hayden, E. Parker, 18201, 18203, 18502
Hench, Philip S.,* 18471
Higgins, Harold L., 18132, 18192, 18292, 18301, 18302, 18342, 18352, 18392, 18402, 18432
Hochwalt, W. Richard, 18491
Holmes, George W., 18012, 18031, 18041, 18042, 18052, 18071, 18081, 18092, 18101, 18111, 18121, 18131†, 18132, 18141, 18142, 18151, 18161, 18162, 18181, 18192, 18201, 18202, 18203, 18211, 18222, 18242, 18251, 18272, 18281, 18283, 18291, 18301, 18322, 18323, 18481, 18491, 18492, 18501, 18512, 18521
Hoyt, William F., 18373
Hugenberger, Paul W., 18062, 18332
Hunter, Francis T., 18042, 18422
Jones, Chester M., 18022, 18031, 18042, 18051, 18052, 18121, 18141, 18152, 18203, 18232, 18251, 18471, 18502
Jones, Daniel F., 18203
Jones, T. Duckett, 18192
King, Donald S., 18022
Kranes, Alfred, 18283, 18323, 18362, 18381, 18401
Kubik, Charles S., 18301, 18381, 18382
Lerman, Jacob, 18311, 18312
Lindau, Arvid, 18091
Linton, Robert R., 18062, 18302, 18352, 18371-2-3
Lord, Frederick T., 18031, 18032, 18042, 18051, 18092, 18102, 18132, 18321, 18322, 18323, 18361, 18452, 18461, 18462, 18482
Ludwig, Alfred O., 18042, 18102, 18172, 18261, 18311, 18321, 18411, 18422
Marks, George A., 18502
Maroney, John W., 18301
Martin, William C., 18091, 18281
McKittrick, Leland S., 18172, 18262
Means, J. H., 18032, 18081†, 18082, 18122, 18132, 18141, 18182, 18311, 18312, 18361, 18412, 18452, 18491
Meigs, Joe V., 18142
Miller, Richard H., 18061, 18331, 18371-2-3
Mintz, E. Ross, 18012
Mixter, W. Jason, 18012, 18092
Monks, John P., 18032, 18102
Montgomery, Hugh, 18322, 18341
Newell, John L., 18152, 18242
O'Neil, Richard F., 18261
Palmer, Robert S., 18221, 18351
Pinckney, M. Morris, 18032, 18051, 18052, 18122
Reggio, A. William, 18251, 18381
Richardson, Wyman, 18062, 18082, 18341, 18422, 18461
Robbins, William B., 18031, 18052, 18061, 18082, 18122
Roots, Logan H., 18201, 18262, 18271
Shambaugh, George E., 18202

*In excerpts from Proceedings of the Staff Meetings of the Mayo Clinic.
†See later notes, published November 3.

Shedden, William M., 18203
Sheldon, Russell F., 18391
Siscoe, Dwight L., 18361
Smith, William D., 18132, 18322
Snyder, William H., 18282
Spence, Allan W., 18311
Spence, Harry M., 18371, 18372, 18382, 18452
Sprague, Howard B., 18061, 18131†, 18182, 18192, 18231, 18361, 18362
Stewart, John D., 18092, 18251, 18331, 18333
Tefft, Richard C., 18402

†See later notes, published November 3, 1932.

Twombley, Gray H., 18022
Van Gorder, George W., 18491, 18492
Vincent, Beth, 18031, 18061, 18142, 18502
Wallwork, David W., 18061, 18281, 18312
White, James C., 18022, 18521
White, Paul D., 18131†, 18182, 18192, 18231, 18401, 18411, 18441
Whittemore, Wyman, 18152
Wilson, Philip D., 18272
Young, David A., 18461, 18482, 18502
Young, Edward L., Jr., 18281

CASE RECORDS
of the
MASSACHUSETTS GENERAL HOSPITAL

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICAL-PATHOLOGIC EXERCISES

EDITED BY RICHARD C. CABOT, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 18521

FIVE WEEKS' JAUNDICE WITH LOSS OF WEIGHT IN AN ELDERLY WOMAN

MEDICAL AND SURGICAL DEPARTMENTS

An American housewife fifty-five years old entered with the chief complaint of jaundice of five weeks' duration.

A year before entry she began to lose weight. After two months the loss was very rapid, 20 pounds in eleven weeks. Immediately after eating she had colicky pains over her abdomen with some gas. After two months the symptoms stopped, but she felt tired and slowly but steadily lost weight. Seven months before entry for four days she vomited three to six times a day. Her physician found severe anemia. She responded well to his treatment with pills and tonic. Five weeks before entry he put her on a high carbohydrate diet and cod liver oil to make her regain weight. Aften ten days the cod liver oil nauseated her so that she vomited immediately. No other food or fat troubled her. About this time she developed a painless jaundice which changed little in intensity. Her stools had been light colored but not clay colored and her urine dark. At the onset she had some itching which later disappeared. Her weight had dropped from 174 pounds the summer before entry to 107.

There was some family history of cancer on her father's side. She had had eleven children. One daughter had recovered from a slight attack of tuberculosis. The patient was a hard-working farmer's wife who had never had time to be ill. Her last child was born by cesarian section.

Physical examination showed an emaciated woman with intensely jaundiced skin and sclerae. She appeared moderately anemic. The nasal septum was deviated. The heart was not abnormal except for a soft blowing apical systolic murmur. The radial arteries were moderately thickened. The lungs were clear. In the right upper quadrant just to the right of the midline there was a slight irregularity visible in the anterior abdominal wall. Beneath it was a large firm irregular mass to which the deep layer of the anterior abdominal wall seemed to be attached as low as the umbilicus. Below that point, in the right lower quadrant, the mass could be felt deeper in the belly. The upper border was not made out. The liver edge could not be felt. The principal mass moved very slightly with respiration. The spleen was just palpable under the costal margin. Pelvic examination showed the cervix deviated in the vaginal axis. The fundus was retroceded, lying upon the rectum in the position of examination. There was a small caruncle at the urethral meatus. The pupils and reflexes were normal.

Before operation a catheter specimen of urine showed bile and occasional white blood cells. Two other specimens showed bile, many white cells, and occasional red cells. The first showed a slight trace of sugar. The specific gravity was normal. Blood examination showed 5,400 white cells, 64 per cent polymorphonuclears, 4,840,000 to 4,750,000 reds, hemoglobin 80 to 60 per cent. A Hinton test was negative. The stools were negative on two examinations. The non-protein nitrogen was 31 per cent. The icteric index was 100. A liver function test showed 100 per cent retention. A van den Bergh was 18.28 milligrams, direct reaction. Gastric analysis showed free acid 45, total acidity 50, guaiac negative.

Before operation the temperature was 97° to 99.7°, the pulse 69 to 97, the respiration normal.

On x-ray examination the heart shadow was not remarkable. The aorta was unusually prominent in the region of the knob. The hilus shadows were moderately increased. The lung markings were prominent throughout the chest, and there was also some increase of density along the inner border of the right apex. The extreme upper portion of the lung fields was less radiant than normal. The stomach showed no definite variation from normal except for some spasm of the antrum. There was marked deformity of the entire duodenum. The cap showed a concave pressure defect on its inferior surface. At the junction of the first and second portions of the duodenum there was considerable tortuosity, and the surface of the duodenum at this point showed marked irregularity in contour. There was slight dilatation and delay in the second portion, and at the junction of the second and third portions there was a constant constriction. The mass could be felt exactly to occupy the loop of the duodenum.

Seven days after entry operation was done. The patient was in fair general condition after it, but had almost complete anuria. There was a suprapubic mass in the midline. Cystoscopic examination showed an apparently normal bladder and no evidence of any obstruction to the ureters. Catheters were left in place, but the anuria persisted. The patient had much vomiting. She developed signs of consolidation or fluid at the right base. X-ray showed the right diaphragm high and sharply domed. There was coarse mottled dullness between the angle of

the diaphragm and the heart, also at both lung roots. The right lung field was smaller than the left. The temperature rose to 102.5°, the pulse to 128. The urine was loaded with bile. The last specimen was bloody. She failed gradually and six days after the operation died.

Clinical Discussion

Dr. Richard C. Cabot: Painless jaundice at her age is a specially dangerous symptom. It always makes us think of cancer, especially of the head of the pancreas.

That is a big drop in weight.

I should say that the family history could be entirely disregarded. It has no value in making us think that cancer is more likely in this case.

We notice that she was "intensely jaundiced", as is often the case in cancer patients. "Moderately anemic" is hard to tell when there is jaundice too.

So far the stomach is negative.

Dr. George H. Holmes: This patient had an examination of her chest, also of the gastrointestinal tract. The interpretation of the chest findings was made from that film, and all of those changes are very slight and probably of no clinical importance in a person of this age, except possibly the high position of the diaphragm on the right.

"The stomach showed no definite variation from the normal except some spasm of the antrum." That may be due to intrinsic or extrinsic causes. If we were unable to find anything other than spasm it was probably due to something outside the stomach. An attempt was made to get films to demonstrate the mass occupying the loop of the duodenum. The shadow that we see here represents the partially filled duodenum, and in no part of it is the outline normal. We must draw our conclusions more from the description of what was found at the fluoroscopic examination than from the film. I might also point out that the fundus of the stomach and its upper portions are normal. These are peristaltic waves. This is the pyloric portion of the stomach, which showed spasm. It is not filled out as it normally should be. A lesion which deforms the entire duodenum and which produces obstruction is usually extrinsic in origin. The common lesion of the duodenum is ulcer. Neoplasm is extremely rare. An extensive lesion like this, which has the general appearance of malignant disease, is much more likely to be extrinsic than intrinsic. As you know, the duodenum passes around the head of the pancreas, and a tumor arising in the pancreas could give a picture much like this.

The findings at the present are a chest normal except for a high diaphragm possibly due to enlargement of the liver, and a lesion which deforms the duodenum extensively and which could be explained by a malignant tumor of the head of the pancreas.

Dr. Cabot: Cancer of the head of the pancreas was in our minds from the beginning because of jaundice without pain in an elderly person. Of course from the physical signs here we have to have a great deal more than cancer of the head of the pancreas. If that mass is in the head of the pancreas it is certainly somewhere else besides. We will make a preoperative diagnosis and then ask Dr. White to take it up. I should say the preoperative diagnosis would be cancer of the head of the pancreas with metastases possibly in the liver itself, probably in the glands at the root of the mesentery, very possibly in the omentum. Any combination of those two, it seems to me, could give us the masses that we feel. I do not see any reason to think the stomach, kidneys, or intestines involved.

Dr. Holmes: Perhaps I should have mentioned lymphoma as a possibility.

Dr. Cabot: I have never happened to see lymphoma in this situation. We have no evidence of enlargement of the spleen, which usually goes with lymphoma, nor of glands elsewhere on the surface of the body. Those are not necessary, however, to a diagnosis of lymphoma. I cannot use this hint of Dr. Holmes' because we have no more reason to suppose lymphoma than any other malignant tumor, and because cancer is commoner in this situation.

A Student: Do you expect to find stones in the gall bladder as a cause of colic?

Dr. Cabot: No, I should not suppose so. Dr. Holmes has shown that whether the mass is in the duodenum or not it certainly impinges on it, and if it impinges on the duodenum I suppose it is enough to produce that spasm of the antrum which certainly would give colicky pain. I think that what he has shown us accounts for the pain without gall stones. It is perfectly possible there are gall stones, but I do not see any reason to suppose so. I do not know any reason to suppose disease in the chest or anywhere else. The very slight secondary anemia does not help us at all in our diagnosis. Dr. Fremont-Smith points out that the spleen was just palpable under the costal margin, which would go with lymphoma and might also be there, I should say, without it.

Would any one like to propose any other diagnosis before we hear the diagnosis?

A Student: Would you even think of hypernephroma?

Dr. Cabot: What we feel is not in the situation where we should expect it, and unless we assume metastases in the region indicated by x-ray and physical examination, we could not account for the symptoms by that diagnosis. But hypernephroma is one of the most latent of all lesions, and though we have no evidence of it here it could be present without evidence.

A STUDENT: What was the suprapubic mass?

DR. CABOT: I do not know, but I should suppose it was the bladder. That is what it usually is.

A STUDENT: Sometimes carcinoma of the stomach is hard to see; is it possible that it was a cancer originating in the stomach and extending into the head of the pancreas?

DR. HOLMES: Yes, it is possible that she has a very small lesion in the pyloric end of the stomach which accounts for the spasm, and that the mass is in the pancreas.

A STUDENT: Would the sugar in the urine make you think of pancreatic tumor?

DR. CABOT: No; with just that single reading and no others I do not consider that we should make any inference. I am thinking of pancreatic tumor, but not for that reason.

DR. JAMES C. WHITE: In the average case of carcinoma of the head of the pancreas we usually can palpate a large gall bladder, and that seemed to be the one thing against a perfectly classical picture of that disease. However, it was accounted for by the fact that this big mass, which was a carcinoma of the pancreas with metastases in the omentum and the posterior and retroperitoneal nodes, had pushed the gall bladder away out into the right flank. There was a distended gall bladder that contained 120 cubic centimeters of bile. The mass had pushed the pylorus right against the abdominal wall and flattened it out. It had grown to the under surface of the liver and involved all the region between the umbilicus and the edge of the liver.

She was so deeply jaundiced that we preferred not to use ether anesthesia. I think she had hypertension, though I did not see the blood pressure reading in the record just now, so I did not want to use spinal anesthesia. We therefore did an exploratory laparotomy under local anesthesia. We infiltrated both rectus sheaths. She was very coöperative and she had no pain during the operation and very little reaction from it. But on account of that anesthetic I could not do so wide an exploration as if she had been under ether, so I did not feel the spleen and had no good chance to feel the liver, as this mass was attached to it. I asked her when we were doing the operation how much itching she had had, with a view to whether we should do an anastomosis between the gall bladder and the intestine. She said she was still pretty uncomfortable from her pruritus. She had no egress of bile into the intestinal canal, and the only thing we could do to help her was an anastomosis to the stomach or to the intestine. On account of this big mass it was also impossible to anastomose the gall bladder to the duodenum, which is the usual place we expect to do an anastomosis. I therefore had to do it to the highest coil of ileum which appeared in the field which could be swung over to the gall bladder. I wondered at the time if this was justified, because of course the ileum contains many bacteria which might give a cholangitis. But I thought it better to risk that than to keep her so uncomfortable. Also it might diminish the chance of postoperative bleeding if we could get bile into the intestinal canal. So we made a wall anastomosis, using the highest coil in the small bowel that we could reach, and then sutured the abdominal wall, using silk because we were afraid healing would not be very good in such a high grade of malignancy.

It is interesting to state here that there were two complications we were worried about in performing such an operation and took every precaution we could to prevent, yet both developed. One was postoperative bleeding with a long advanced five weeks' history of jaundice and the other was renal failure. So many of these cases which are operated on with advanced jaundice get complete renal shut-down after operation on the biliary tract. That is true whether it is for stone in the duct or carcinoma. This patient had no temperature the first few days after operation. She was in good shape, but she put out practically no urine, only a few ounces a day of bloody urine. Concurrently a mass appeared, feeling very much like a distended urinary bladder, which was the first thing we thought about. We catheterized her, but the mass remained. Then we did a cystoscopy and catheterized the ureters, but the mass did not disappear. I will let Dr. Mallory tell us what it turned out to be.

DR. HOLMES: This film was taken after the operation to determine whether there were any pulmonary changes. We see in the lower part of the right lung this rather coarse mottled dullness, which is what we see in bronchopneumonia. The diaphragm is high on this side, but we noticed it was a little high before. The patient was rotated, so it is not possible to say with certainty whether the heart was displaced. If we knew that she had a high fixed diaphragm and the heart was displaced on that side we might seriously consider postoperative collapse, but I should think the most likely thing was bronchopneumonia.

DR. CABOT: I take it, Dr. White, operation was done to palliate the effects of the jaundice?

DR. WHITE: Yes, that was the only reason for doing it. It was the only thing to do, because the tumor was so big that it was obviously inoperable.

DR. CABOT: There is nothing else you can do in a case of cancer of the pancreas?

DR. WHITE: No case of carcinoma of the pancreas, even of the tail, has ever yet been resected successfully.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Carcinoma of the head of the pancreas.
Uremia (anuria).

DR. RICHARD C. CABOT'S DIAGNOSES

Cancer of the head of the pancreas.
Metastases in the omentum, the retroperitoneal glands, and perhaps in the liver.

ANATOMIC DIAGNOSES

1. *Primary disease.*

Carcinoma of the head of the pancreas.

2. *Secondary or terminal lesions.*

Dilatation of the bile ducts.
Operation wound, cholecystoileostomy.
Acute hepatitis.
Generalized peritonitis, B. coli.
Jaundice, marked.
Hematoma of the abdominal rectus muscle.
Hemorrhage into the genito-urinary tract.
Hydrothorax, slight right.
Pulmonary edema and congestion, slight.

3. *Historical landmarks.*

Mitral stenosis, slight.
Colloid adenoma of the thyroid.
Endometrial polyp.
Submucus leiomyoma of the uterus.

DR. TRACY B. MALLORY: We found a very large carcinoma of the pancreas which had invaded the walls of the common bile duct and had spread pretty well up it and in fact part way up the cystic and both hepatic ducts. At the time of autopsy there was not complete obstruction at any point, even in the common bile duct itself, although there was quite marked narrowing. If the tumor had progressed a little farther it would soon have caused constriction at any one of several points, and in that instance the anastomosis of the gall bladder might eventually have failed to function because of stenosis of the cystic duct itself.

The mass which appeared postoperatively in the abdominal wall turned out to be an immense hematoma in the right rectus muscle, weighing a little over 600 grams. The most significant immediate cause of death was a generalized peritonitis. The kidneys showed a good deal of degeneration of the tubules. We were quite unable to say whether that represented simply postmortem change or whether it was an actual ante mortem degeneration. There was a considerable amount of blood in the urinary tract, masses of blood being found in both kidney pelves and in the bladder itself. An unexpected incidental finding was that there was a slight though very definite mitral stenosis.

DR. CABOT: Was there anything in the liver?

DR. MALLORY: Only where the tumor had directly invaded it, along the paths of the ducts, to a very slight extent. There were no separate metastases.

DR. HOLMES: Was there anything definite in the lungs?

DR. MALLORY: Simply congestion.

CASE 18522

DYSPNEA AND BLURRED VISION IN A WOMAN OF THIRTY-SIX

MEDICAL DEPARTMENT

A married American woman thirty-six years old entered December 29 complaining of dyspnea and blurred vision.

Six years before admission she had an attack of nocturia, edema of the legs and headache. Since that time she had had similar attacks every winter and for five or six years moderate dyspnea on exertion. Eight months before admission, examination of the urine in the Outpatient Department of this hospital showed that it was loaded with albumin. Four weeks before admission she noticed scotomata and blurring of vision. She became much more dyspneic and orthopneic. December 11 fundus examination in the Outpatient Department showed blurred vision, choking of the disks, marked edema of macula with star, marked hemorrhage and exudate. For two weeks she had had sharp precordial pain radiating to her left shoulder. During the past week she had had considerable nausea and occasional vomiting. Her appetite had been very poor. In eight months she had lost twenty pounds.

She had had varicella, typhoid fever and influenza. During her last pregnancy, eleven years before admission, she had edema of the ankles and headaches. These symptoms disappeared after her delivery. She had had three miscarriages without trauma.

Clinical examination showed a fairly well developed, undernourished woman sitting up in bed with moderate dyspnea. Her breath was ammoniacal. The veins of the neck were somewhat distended. There was some pallor of the mucous membranes. The skin of the thighs showed several purpuric spots. There were signs of fluid at the right base with a small amount of fluid or high diaphragm on the left. The apex impulse of the heart was seen and felt in the fifth space, forceful, moving the chest wall. The left border of dullness was 10.5 centimeters to the left of midsternum, 4 centimeters outside the midclavicular line, the right border 3 centimeters to the right, the supracardiac dullness 5 centimeters. The sounds were not of good quality. A loud systolic murmur was heard throughout the precordium, loudest at the apex. There was protodiastolic rhythm. The pulses and peripheral vessels were normal. The blood pressure was 234/130 to 150/80. An electrocardiogram showed sino-auricular tachycardia, rate 120, flat T_1, diphasic T_2, and T_3, somatic tremor. The abdomen was slightly distended and tympanitic. There were no signs of ascites or masses. The epigastrium was held tense, preventing adequate palpation. The lower legs and feet appeared swollen and gave a feeling of bogginess, though there was no defi-

nite pitting edema. There were small conjunctival hemorrhages in both eyes. The papillary reactions were normal. The knee-jerks and ankle-jerks were normal.

Urine: 146 to 43 ounces, specific gravity at a two-hourly test 1.008 to 1.012, by other tests 1.012 to 1.016; a trace to a large trace of albumin in all of ten specimens. The sediment of a catheter specimen showed 4 to 5 white cells and 1 to 3 red cells per field. Renal function 5 per cent. Blood: 11,000 to 14,600 white cells, hemoglobin 60 per cent, reds 4.55 million. Hinton negative. Non-protein nitrogen 58 to 118. Creatinin 4.9 to 7.6.

Temperature 101° to 97.8°. Pulse 140 to 86. Respirations 28 to 18.

By December 31 the patient was still dyspneic and orthopneic but somewhat more comfortable. There was a small patch of bronchial breathing with increased tactile fremitus at the right base. There were râles at both bases, also a few crepitant râles over the left hilus anteriorly. A portable x-ray film showed mottled dullness which obscured both phases. All details were obscured by respiratory motion. There was no temperature. The patient lost ground and became drowsy. January 13 she had two convulsions, in the second of which she died.

Discussion

BY MAURICE FREMONT-SMITH, M.D.

If she had dyspnea alone, or blurred vision alone, there might be a good many causes for either symptom. But this combination certainly suggests one diagnosis, and that is nephritis.

This is the history of a progressive loss of kidney function. The nausea, vomiting and poor appetite suggest that the kidneys were absolutely insufficient and that she was facing a uremia.

In a certain number of women who have toxemia of pregnancy definite damage to their kidneys results, and maybe a number of years later the kidneys show a nephritis. It may be that this is the cause of the present condition. Certainly there is a great deal of question whether a woman who has had toxemia should go on with other pregnancies. The difficulty is that it is impossible to say that a given person has or has not damaged kidneys; and a great many women do go through perfectly normal pregnancies after a toxemia with apparently no damage.

We have evidence here of a heart that is laboring under the load of an excessive blood pressure, and there may be absolutely no heart disease aside from the dilatation as the result of this hypertension, which in its turn comes probably from a chronic nephritis. I am surprised to see that in the hospital her blood pressure came down to 150/80,—particularly surprised at the 80, because that is a normal diastolic blood pressure. Many hearts that have carried hypertension, sometimes for years, will, when compensation breaks, be unable to keep up the systolic pressure; but usually the diastolic pressure does not come down, may even rise. So we might have expected 150/100, but it is unusual to see 80 in such a case.*

Sino-auricular tachycardia is a tachycardia starting at the normal pacemaker of the heart. Somatic tremor may be interesting and significant. It may mean that the muscles are already of increased tone, in other words, that a convulsive attack may be in the offing.

I see nothing in this physical description to argue against the diagnosis of chronic nephritis, hypertension, hypertensive heart disease, possibly early uremia. The purpuric spots and the hemorrhages in the conjunctivae can both occur in a chronic nephritis, as also the hemorrhages in the eye grounds.

The two-hourly test was evidently not well done, otherwise we should have got a larger variation in specific gravity. The two-hourly test is meant to show the greatest changes that can occur in the specific gravity of the urine, and apparently did not do so. Even so, from 1.008 to 1.016 is a very distinctly fixed urine at a somewhat low level. There is nothing in the sediment that chronic passive congestion would not show. However, we have the albumin and all the other factors necessary to make a diagnosis of nephritis. In chronic passive congestion the specific gravity would have been much higher.

"Non-protein nitrogen 58 to 118", the top normal being 35. "Creatinin 4.9 to 7.6," the normal being 1 to 2. Of course a creatinin of 5 means months of life only — usually a few months. I think it is one of the most important prognostic signs that we have.

Before seeing the x-rays I think it is worth while saying again what Dr. Cabot has said to you before, that chronic passive congestion at the bases can account for these râles, that an enlarged liver pressing up may account for increased density at the right base. Therefore unless we have some other signs to make us think she is starting a bronchopneumonia, we have no need to make that diagnosis. Here we have reasons to consider pneumonia: one being that she is almost in uremia, in which infections of the pericardium and of the lungs are very common; also the increased temperature and increased white count, which I am not quite ready to accept on the basis of uremia without infection. So I should not be surprised to find she did have a bronchopneumonia. Did she have a bronchopneumonia?

Dr. Aubrey O. Hampton: Our findings can be all due to passive congestion at the bases. I do not know how we could be sure that there was anything else. At the same time there

*This reading was made the day before death.

could be. There was some rotation. The apex was not quite so far out as it looks, but the heart does seem enlarged. The intercostal space is also wide.

DR. FREMONT-SMITH: A little more dullness in the right apex?

DR. HAMPTON: There is some rotation. It is pleural if it is anything.

DR. FREMONT-SMITH: She had no temperature at that time, which of course does not mean that she did not have a pneumonia, although at thirty-six, unless she was desperately sick—and of course she was—we should expect pneumonia to give her fever. If she had been sixty-six or seventy it might give no fever.

DIFFERENTIAL DIAGNOSIS

Rather than try to guess at the type of nephritis which she had—I suppose we should have called it a parenchymatous nephritis in the old days—rather than do that I shall take a moment to tell what they probably did to her in the hospital. On the edge of uremia, what would they do? In the first place, they would want to keep her warm and to sweat her if they could. Patients are very difficult to sweat in uremia. Sometimes one rigs up some sort of hot air machine or puts hot water bottles in the bed; sometimes one gives pilocarpin. Then the gastro-intestinal tract should be cleared out, and such patients should, if they can take it, be given a dose of salts. Oftentimes they are vomiting or so nauseated that they cannot take it. In that case they should be given a colonic irrigation or a large hot enema.

As to diet, they should be put on a low protein diet. But if you put a patient on a low protein diet, in other words starve him, he will use his own proteins and the kidneys will have just as much work as they had before. Therefore give carbohydrates, if not by mouth, then by rectum or by vein. Five hundred or 750 cc. of 10 per cent glucose should be given once or twice daily by vein and especially carefully because of the dilated and failing heart. Intravenous fluid given rapidly under such conditions is dangerous.

For the convulsions, give morphia or if necessary chloroform, sometimes chloral by rectum. Sometimes patients will come out of uremia and go on for a number of months. Usually a chronic nephritis will not go very long. But sometimes an acute nephritis, if tided over a period of uremia, will completely recover. Therefore treatment is important in these people, although usually it is not very effective.

Could you add, Dr. Cabot, anything to that?

DR. CABOT: No.

DR. FREMONT-SMITH: Then a diagnosis of nephritis, hypertensive heart disease, chronic passive congestion, probably bronchopneumonia, perhaps pericarditis, and death from uremia.

A STUDENT: Have you any evidence of pericarditis?

DR. FREMONT-SMITH: No, no reason to bring that in at all. That is just in case there should be!

A STUDENT: Would you lay the edema to nephritis?

DR. FREMONT-SMITH: I think so. Perhaps to her heart, perhaps to both.

X-RAY INTERPRETATION

The findings are more suggestive of a patchy consolidation than of fluid.

CLINICAL DIAGNOSES (FROM HOSPITAL RECORD)

Chronic nephritis with hypertension.
Cardiac failure.

DR. MAURICE FREMONT-SMITH'S DIAGNOSES

Chronic nephritis.
Hypertensive heart disease.
Chronic passive congestion.
Probably bronchopneumonia.
Possibly pericarditis.
Uremia.

ANATOMIC DIAGNOSIS

Chronic glomerulonephritis.

PATHOLOGIC DISCUSSION

DR. TRACY B. MALLORY: We were limited in this autopsy to the abdominal cavity, so I can not tell you whether there was pericarditis or bronchopneumonia.

She did have a chronic nephritis, not quite what I would have guessed from her story. I should have guessed she would have atrophic kidneys. As a matter of fact the kidneys weighed 325 grams, which is normal for a woman of her size, though the cortex was a little thin and very yellow. Microscopically we found a very extensive glomerular involvement, alternating atrophy and hyperplasia of the tubules, some lipoid degeneration of the persisting ones and extreme lipoid deposits in the stroma. There was also a good deal of secondary degeneration in the blood vessels. The picture is that of a late subacute or early chronic glomerulonephritis.

I do not think it is possible to say how long the process had been going on, because cases of nephritis progress at varying rates of speed. An atrophic kidney can undoubtedly be produced in three or four years in one case, whereas it may take ten or fifteen years to produce the same sized kidney in another case. It is possible, however, that the process had been going on since or even before her pregnancies. She

was married at nineteen and in the course of seven years had eight pregnancies, three of them terminating in miscarriages. Eleven years before admission, during her last pregnancy, she had edema. That would suggest that she may have had nephritis at that time, although that is merely a hypothesis.

DR. FREMONT-SMITH: Can you say anything about the relation of pregnancy to later nephritis?

DR. MALLORY: I think there is very little evidence that the toxemia of pregnancy causes permanent damage to the kidney. In the acute stage one finds acute degeneration of the tubules, but apparently when the patients recover, they recover with perfectly good renal function. If they have another pregnancy they may have a recurrence or may go through without it. It is much commoner to pick up for the first time during pregnancy a true nephritis which has never before produced symptoms. A large proportion, perhaps a majority of nephritides produce no symptoms during the acute stage, and those cases may be first noticed during a pregnancy. Perhaps then for the first time a urine examination is made or edema appears, and one then assumes that nephritis occurred during pregnancy. If we have a chance to do autopsies or to follow the patients after toxemia, I think we can very often prove that the nephritis must have existed before the pregnancy and that the pregnancy merely brought it to attention. I think most obstetricians try now to separate these two classes of cases, one toxemia directly due to the pregnancy, the other nephritis in which the symptoms appear for the first time during the pregnancy,—the symptoms perhaps fairly similar but the prognosis distinctly different in the two types.

ERRATUM

The anatomic diagnosis of Case 18482 should have read, Adenocarcinoma of the lung, possibly of alveolar origin.

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THE FATE OF INFERIOR MEDICAL SCHOOLS

THE problem of what shall become of medical schools of inferior grade may not concern the medical profession so much as it does other non-medical groups in society; yet it does, however, deserve consideration by physicians. The right of a medical school to exist, if it does no harm, is generally acknowledged, so that the discussion must focus on two points, the peculiar nature of the medical school, as it actually exists, and the condition laid down, that it do no harm.

Why should there be control by the state over medical or any other form of education given by institution or private individuals, if there is in it nothing contrary to morals or to public policy? The point lies exactly in what the institution says about the education which it gives for a financial consideration. If it says nothing, some other ground for criticism must be taken. If the students are not satisfied with the content of the courses, with the methods of instruction, with the rules of the school, they may go elsewhere and no harm is done except that they have wasted some time and some money; perhaps they have wasted nothing.

What does the medical school say on or by its diploma given to its graduates? It says in substance, with some variation in form, that the candidate has completed the course of instruction to the satisfaction of the instructors, and that he has become thereby, on declaration of the signers of the diploma, entitled to all the honors, rights and privileges of the degree of doctor of medicine thereto appertaining. Is this statement true? Yes, perhaps, if it is understood to mean "in the opinion" of the signers of the diploma. Who are these signers? Are they competent to judge? Is their opinion worth anything of value as compared with recognized authorities? Perhaps their opinion is worth only what the candidate is willing to pay for the diploma. The seal of approval is set upon the candidate, but it may be a misbranding of the product of the school.

The point about the medical diploma is that it has by law a value not attached to a diploma which says the candidate holds the degree of doctor of laws, or theology or science or letters. Without the medical diploma, the candidate cannot even take the examination for registration and so he cannot be licensed to practice medicine. The law innocently accepts all medical diplomas as of the same value, if the donors meet the legal requirements. Yet it is a matter of record that the seal of approval of a legally chartered and empowered medical school has, in certain instances, been set upon candidates who have pursued no course of study, and who have merely exchanged for the diploma a financial consideration.

Under the present law of Massachusetts, the Board of Registration in Medicine cannot officially determine whether a given medical school is a diploma mill when it sees one; the Board is blind in this respect. In the same way, the Board is dumb; it cannot disapprove of any legally chartered school. Its eyes should be opened and its tongue should be loosened.

The diploma from a medical school should mean that the holder has received a reasonably good medical education. That it does not have this meaning is shown by the results of the examinations published in the annual report of the Board of Registration in Medicine. There it is pointed out that in the year 1931, of thirty-one holders of diplomas from one group of medical schools, legally chartered and empowered to confer degrees in medicine, twenty-seven individuals or 81 per cent failed in their examinations before the Board.

In the problem of what disposition should be made of schools of inferior grade, there is involved the right of the state to set standards of fitness which must be fulfilled by individuals before they may undertake certain functions which involve other individuals in society, for

example, the practice of medicine, dentistry and nursing. Furthermore, if the candidates are prepared in a professional or vocational school, the state has also the right to set up for the schools standards which they must meet if their graduates are to be eligible for examinations. That the state has this right, there is no doubt.

The question of the opening of a school of medicine, for example, is not one that falls within the province of the Board of Registration to decide, and whether a school should be closed is also outside its province. But it is strictly within its province to see to it that the character of the education given to the candidates is such as to qualify them for the practice of medicine and it should therefore be given by statute the power of finding out directly what that education is, and the power to approve or disapprove of schools in accordance with the evidence that appears on thorough investigation.

THE TEACHING OF SURGERY

THE importance of scientific surgery is universally recognized and since this department of medicine has emerged from the stage when manual dexterity, although important in the application of the art, was regarded as perhaps the greatest asset of the operator, the necessity for thorough training in physiopathology as a foundation for breadth of vision and understanding is a recognized feature of medical pedagogy.

This attitude has found expression in the appointment of a committee, by the Board of Regents of the American College of Surgeons to study the teaching of surgery as set forth by Dr. Elliott C. Cutler in his paper, on page 1182 of this issue, which gives the names of the committee with their assignments.

This preliminary report is illuminating in that there appears the profound conviction that the study of surgery and the training of its devotees have heretofore been quite inadequate as a general rule, and that the recent graduate who plans to engage in surgery is not impressed with the responsibility which he has assumed.

The final report will undoubtedly have a great influence on the adaptation of the curricula of medical schools to more ideal methods of teaching the principles of this field of therapeutic medicine.

It may be advisable to insist on a careful reading of the final report by all medical students, so that there will be projected into the minds of prospective surgeons a realization of the fact that "surgery is a dangerous specialty" and should be restricted to those who show special credits and special training above that required of those entering upon the general practice of medicine.

AN APPRECIATION

THE recent retirement of Dr. Frank Burr Mallory, pathologist to the Boston City Hospital, deserves more than passing notice. Dr. Mallory, who for more than thirty-five years has received, not only national, but international recognition, has been forced to retire at the age of seventy because of the requirements of the pension act. He plans, however, to continue his work at the laboratory as a volunteer—a situation unique for a pensioner on a city payroll, but typical of Dr. Mallory.

During the thirty-five years that he has been at the Boston City Hospital, the reputation of the Pathological Laboratory as an institution for pathological training has grown to such an extent that two or three times as many applications for interneship are received each year as there are available positions. Of the one hundred and twenty-five men who have been internes or assistants there are many who stand at the top in their particular line of work, be it pathology or clinical medicine. Among the local pathologists who are graduates of the laboratory are Dr. T. Leary and Dr. G. B. Magrath, medical examiners of Suffolk County; Dr. S. B. Wolbach, professor of pathology at Harvard Medical School and pathologist to the Peter Bent Brigham Hospital; Dr. C. F. Branch, associate professor of pathology at Boston University Medical School and pathologist to the Massachusetts Memorial Hospitals; Dr. H. E. MacMahon, professor of pathology at Tufts Medical School; Dr. Shields Warren, pathologist to the Deaconess Hospital; Dr. Mallory's son, Dr. Tracy B. Mallory, pathologist to the Massachusetts General Hospital; and his own successor, Dr. Frederic Parker, Jr.

The two standard textbooks, "Pathological Technique" (in collaboration with the late Dr. J. H. Wright) and "Pathological Histology", are among Dr. Mallory's outstanding contributions to medicine. Primarily interested in the detailed examination of pathological specimens, he has added an immense amount of knowledge to the methods and interpretation of histological examination. For many years his publications concerning hepatic cirrhoses have attracted well-deserved attention and quite recently, as intimated in his Shattuck Lecture of the current year, progress has apparently been made toward determining the etiological factor in the so-called alcoholic cirrhosis. As editor of the *American Journal of Pathology*, which replaced the *Journal of Medical Research*, his painstaking and exacting supervision has resulted in a standard that can well serve as an ideal for publications of a similar nature.

The *Journal* takes this opportunity to congratulate Dr. Mallory on his many accomplishments and to wish him many more years of health and contentment as consulting pathologist to the Boston City Hospital.

THE SIGNIFICANCE OF CERTAIN FEATURES OF THE REPORTS OF THE COMMITTEE ON THE COSTS OF MEDICAL CARE

On page 1193 of this issue may be found the reactions of Dr. Lewellys F. Barker, a member of the Committee on the Costs of Medical Care, to the findings and recommendations of this committee.

He is qualified to deal with the complex questions which must arise in the minds of those who have taken time to read the majority and minority reports. His address is especially devoted to the relation of the recommendations to medical practice and is of particular interest because of his extensive association with practitioners as well as his position as a teacher of medical students.

He places especial emphasis on the desirability of action in applying sound judgment to a solution of the problems relating to the care of illness now before the profession.

In our next issue there will appear a paper, by Dr. Van Etten a member of the minority group, which will express some of the sentiments which may be found in the minority report.

THIS WEEK'S ISSUE

Contains articles by the following named authors:

Larrabee, Ralph C. A.B., M.D. Harvard University Medical School 1897. Physician-in-Chief, First Medical Service, Boston City Hospital. Associate Professor of Medicine, Tufts College Medical School. Address: 912 Beacon Street, Boston. Associated with him is

Littman, David. M.D. Tufts College Medical School 1929. Formerly Resident on the First Medical Service, Boston City Hospital. Address: 178 Washington Street, Chelsea, Mass. Their subject is "Hereditary Hemorrhagic Telangiectasia with a Report of Five Cases in Two Families." Page 1177.

Cutler, Elliott C. M.D. Harvard University Medical School 1913. F.A.C.S. Surgeon-in-Chief, Peter Bent Brigham Hospital. Moseley Professor of Surgery, Harvard University. His subject is "Report on Undergraduate Teaching of Surgery." Page 1182. Address: Peter Bent Brigham Hospital, Boston.

Young, Edward L. Jr. A.B., M.D. Harvard University Medical School 1909. F.A.C.S. Assistant Visiting Surgeon, Massachusetts General Hospital. Visiting Surgeon, Faulkner Hospital. Instructor in Surgery, Harvard Medical School. His subject is "A Case of Intrathoracic Goitre." Page 1185. Address: 279 Clarendon Street, Boston.

Grund, J. L. M.D. Harvard University Medical School 1921. Assistant Dermatologist, Department of Dermatology and Syphilology, Massachusetts Memorial Hospitals. Instructor in Dermatology and Syphilology, Boston University Medical School. His subject is "Fungus Skin Disease and Allergy: A Causal Relationship." Page 1187. Address: 483 Beacon Street, Boston.

Curran, John F. M.D., Tufts College Medical School 1912. F.A.C.S. Junior Surgeon, East Surgical Service, Worcester City Hospital. District Surgeon, New England Telephone and Telegraph Co. Address: City Hospital, Worcester, Mass. Associated with him is

Goodale, Raymond H. B.S., M.D. Harvard University Medical School 1924. Pathologist, Worcester City Hospital and Harrington Hospital, Southbridge. Lecturer in Parasitology, Boston University School of Medicine. Address: 55 South Lenox Street, Worcester, Mass. Their subject is "Traumatic Bile Cyst of Liver." Page 1192.

Barker, Lewellys F. LL.D., M.B., Hon. M.D. University of Toronto 1905. Professor Emeritus of Medicine, Johns Hopkins University School of Medicine. Visiting Physician, Johns Hopkins Hospital. His subject is "The Present and Future Significance of the Findings and Recommendations of the Committee on the Costs of Medical Care—From the Physician's Point of View." Page 1193. Address: 1035 N. Calvert Street, Baltimore, Maryland.

Barbour, Ellen. Her subject is "Social Aspects of Poliomyelitis." Page 1195. (This paper was prepared under the supervision of Dr. Lucile Eaves.) Address: 54 Hancock Street, Lexington, Mass.

Scudder, Charles L. A.B., Ph.B., M.D. Harvard University Medical School 1888. F.A.C.S. Consulting Surgeon, Massachusetts General Hospital. His subject is "Postgraduate Education with Reference to the Treatment of Fractures." Page 1198. Address: 144 Commonwealth Avenue, Boston.

MISCELLANY

A RADIO MESSAGE PREPARED AND SPONSORED BY THE COMMITTEE ON PUBLIC EDUCATION OF THE MASSACHUSETTS MEDICAL SOCIETY FOR THE DEPARTMENT OF PUBLIC HEALTH

Burning the Candle at Both Ends*

BY HAROLD W. STEVENS, M.D.

"Burning the Candle at Both Ends" has long been a symbol for extravagant expenditure. I believe it is supposed to be especially applicable to the extravagant use of human energies. There is certainly wise counsel in this common use of the expres-

*Station WBZ, October 4, 1932, 4:15 P. M.

sion in so far as "extravagance" is understood to mean "waste". The old Hebrew prophet wrote, "Why do ye spend money for that which is not bread; and your labor for that which satisfyeth not?" A modern prophet gifted with the same understanding foresight might exhort us of the present day in the same language. Living human resources in health and strength spent in unproductive labor or in demoralizing pleasure is the most deplorable of all waste; but does this tell the whole lesson of the burning candle? Is burning the candle at both ends always a mistake?

If energy were something to be conserved by using it sparingly, who of all human beings should have need to save for the long future years—if not the growing infant. Has caution or fear of overdoing ever guided the spontaneous development of a child? The spirit of growing childhood is untiring quest of new adventure. The ceaseless, energy-expending activities of the very young child may seem futile and wasteful, an annoyance to adults of more temperate habits, a thing to be suppressed or isolated or patiently borne as a necessary evil. If however, we are gifted to see in perspective the whole span of years, we understand that this prodigal, apparently purposeless, activity is an indispensable part of preparation for the more deliberate, perhaps more significant, activities of the later years.

Social development seems to follow the same order. The surging tides of human energy poured unstintingly into the task of developing and applying coal and oil and steam and electricity to human desires during the past fifty years can hardly be regarded as having depleted or impoverished the civilization of today. Material and spiritual advances have come with eras of intense, unsparing commitment of energies to great purposes. Material and spiritual depression and poverty have accompanied states of social morale poor in the spirit of new adventure and achievement.

Unsparing expenditure or even extravagance, then, is not necessarily the same as waste. Indeed by one of those strange paradoxes, expenditure of the right sort becomes the surest kind of saving. Some years ago, the National Safety Council prepared and presented at its annual meeting a pageant designed to set forth the particular idea of safety of which that organization is the exponent. The title of this pageant was "Adventure" and its theme the truth that genuine safety consists not in the static security of mere existence, but in the dynamic promise of life preserved for more stirring and greater adventures. In the pageant, Lachesis, the impartial one of the Fates who preside over the destinies of men, exhorts mankind to *adventure wisely;* and tells laconically the fate of those unfortunates who follow the guidance of that most elusive of all phantoms—Security. "They *lose* their *all* who watch their all too close and tremble lest they lose a part of it."

To return to our story of the burning candle. From rather careful inquiry I have not been able to find that anyone has ever taken the trouble to determine the relative effectiveness of a candle burned at both ends. Somehow such a figure of language never seems to mean what it should without at least a little actual knowledge of the facts from which the figure derives its meaning. So, at home, with a table as my laboratory I set up a crude experiment in photometry. The simple tests I was able to make showed that when compared with the candle burning at one end and in the conventional upright position a similar candle supported horizontally and burning at both ends gave — not twice as much light or even less as I had supposed it should— but actually about four times as much. The rate of consumption, was, of course, much more rapid, in fact about thirty times that of the first candle. I observed another interesting fact; that a candle burning at only one end, but upside down, was consumed very fast indeed but sputtered and smoked and gave scarcely one-tenth as much light as the upright candle; and only about one-fortieth of that from the candle burning at both ends. Thus, in terms of quantities of wax used up and of light given off, the candle burning at both ends was only about one-eighth as efficient as the upright candle; its light, however, while it lasted, was about four times as bright as that from the other candle. In fact it appeared that a given candle burning freely at both ends yields the greatest brilliancy possible for that particular candle.

I venture to suggest that this crudely acquired information may add something to the poetry of the burning candle. The candle burning upside down perhaps shows in a truer light the results of wasteful excess as also of miserly unproductive hoarding. The rather expensive increase in brilliancy of the candle burning at both ends perhaps brings a little more intelligent courage to those momentous moments when four times as much light is worth far more than any amount of unburned inert wax.

Thus our counsels of Health and Safety will be in part futile as a guide for living human beings, unless they embody some more vital objective than mere perpetuation of existence. Of course no exponent of Safety would suggest reckless, fruitless expenditure of our limited funds of strength and endurance. On the other hand, what live human being can endure an anemic safety composed solely of prohibitions and cautions? The Health and Safety program that can come in a practical, helpful way into your life and mine must embody, to be sure, a lot of wise and sober counsel; but for me it will fail unless when I sorely need more light, it can show me how I can safely and with profit burn my candle at both ends. Recently I saw a verse written by Edna St. Vincent Millay. At first glance, it doesn't seem to have much to do with anything so sober and serious as Health and Safety. It certainly does not suggest the conventional language of safety programs; but it does hit squarely a mark that safety programs often miss, it so frankly and fearlessly

declares a kind of faith and courage that at times stirs every red-blooded human being.

"I burn my candle at both ends.
It won't last through the night.
But, Ah my Foes; and Oh my Friends,
It gives a lovely light."

A TRIBUTE TO DR. FRANK B. MALLORY

The Trustees of the Boston City Hospital wish to place on record their deep regret, which is shared by every member of the Staff, that the statutory limitation as to age has compelled Dr. Frank Burr Mallory to resign his position of Chief of the Pathological Department. Appointed an Assistant in Pathology in June, 1891, a year after his graduation from the Harvard Medical School, he has since given distinguished service to the Hospital by work of constantly growing importance which has won for him an international reputation as investigator and teacher. His ability to impart his knowledge and his enthusiasm in research have attracted brilliant young men to his laboratory for training, and his success is shown by the appointment of thirty-two of the one hundred and five students who have sought his instruction to professorships of pathology or medicine, while others have gained prominence as medical examiners or as pathologists in our larger hospitals, a record which the Trustees believe to be unequaled by any other teacher. In his earlier years he made notable contributions to our knowledge of the infectious diseases. His studies aided much in the classification of tumors, and in their diagnosis he has become the court of last appeal. His contributions to the technical refinements in diagnostic methods have been numerous and valuable, and the stains which he developed are in world-wide use. While these achievements would give him high rank among pathologists, he has shown that time has succeeded only in ripening his faculties by doing his most outstanding work in his later years in demonstrating the genesis, classification and pathology of hepatic cirrhosis. By prolonged and painstaking research he has discovered the cause of pigment cirrhosis and has proved that alcohol is not per se an agent in producing any form of the disease. His laboratory has been a centre to which all members of the medical staff came for help in the solution of their pathological problems, and his knowledge has been a source from which all could draw. He has not only been a most devoted servant of the Hospital, giving lavishly of his time, but also a most generous benefactor, for he has contributed to the inadequate funds provided for the laboratory by annual gifts which sometimes were nearly equal to his salary. He has maintained the highest standards of the scientist without relaxation, and his industry, enthusiasm and unfailing courtesy have been an inspiration to all his associates.

The Trustees congratulate every citizen of Boston that, in spite of his enforced retirement, he will still be found, as Consultant in Pathology, at his desk, working in their interest with the same untiring devotion to discover the causes and effects of disease and the methods of combating them.

A CONSOLATION TO USERS OF TOBACCO

It has been claimed by the Department of Physico-Optics of the University of Southern California that tobacco smoking seems to increase the sensitivity of eyesight to red and green. Tests seem to indicate that this increased sensitivity is shown by enlarged fields for these colors. This may be of advantage in cities where increased vision would enable automobile drivers to observe the red and green lights at intersecting streets.

THE HIGH COST OF RHEUMATISM

Speaking before the National Association of Insurance Committees recently, Dr. C. W. Buckley of the British Medical Association for research into the causes and treatment of arthritis and allied conditions set forth that rheumatism of all kinds accounted for one-sixth of the total benefits paid out of the national health insurance act in England.

"The total incapacity due to this disease must now amount to not less than 5,500,000 weeks and the cost exceeds $25,000,000 per annum," he says. "This does not include the loss of wages or the cost of treatment in hospitals and institutions which bring up the total to something like $100,000,000."

Dr. Buckley claims that this appalling expenditure could be reduced by early diagnosis and prompt treatment which could be brought about by organization of research under proper control. His theory is that medicine plays only a secondary part in the treatment of rheumatism and that benefit is dependent upon bringing within the reach of all, massage, electricity, baths and other forms of physiotherapy.

CONTROL OF DIABETES

The City of New York Department of Health is paying especial attention to the incidence, cause and treatment of diabetes in that city. The report is current that the death rate has increased rapidly during the last twenty years, having been only 17.53 per 100,000 in 1912 and rising steadily to 27.09 in 1931, so that, at the present time in New York City, diabetes is charged with approximately 2,000 deaths annually.

There is every reason to believe that this high mortality is due to a lack of intelligent treatment of diabetes in its various manifestations. It must be recognized that this apparent increase places upon the medical profession the necessity for studying the prevention of this disability, which is becoming more and more a major public health problem. One very important reason, in all probability, why the mortality rate has increased is because of better diagnostic ability on the part of attending physicians. In former years people dying of diabetes were very often diagnosed as succumbing to the

apparent disability, such as pneumonia or tuberculosis. Advances which promise more in the control of this disease consist of the early use of adequate hospital and clinic care of patients, with detailed instructions for the essential features of treatment. It has been demonstrated, wherever diabetes is given scientific supervision, that a patient can be taught to apply the appropriate treatment in a great majority of cases, thereby bringing about a practical return to health. One difficulty from a public health standpoint is that diabetes is not a reportable disease, so that the study of mortality rates is only approximate. There are still deaths dependent upon diabetes, which may not appear in physicians' certificates.

It is interesting to note that under the age of 55 there is little difference in the mortality rate between males and females, but that thereafter, while the rate for both sexes rises sharply, the rise for females greatly exceeds that for males and that in females the rise reaches its maximum in the period from 65 to 74, after which it declines; and that in males there is still further increase after 74, the highest rate being in the oldest age group. Further studies are of interest with relation to the ratio prevalence of diabetes which is still under study.

"WAR AND THE DOCTOR"

A pamphlet with the above-mentioned title, by Professor J. Mermingas, of Greece, urges combined action by the medical profession against war. Not only does war mean a lowering of medical ideals, but it introduces factors which threaten the life and health of mankind. The after-effects of war from the medical point of view are such that they, if carefully studied, ought to make every doctor an unqualified opponent of war. "War, in the last resort, is nothing other than an epidemic."—From "*The War Resister*" Autumn Issue, 1932.

EFFICIENCY

American railroads have a remarkable record in the solution of unique problems in which a matter of minutes in some cases, and inventive genius in other cases, spelled the difference between success and failure.

How the Burlington Railroad, faced with a case of extreme necessity involving the safety, if not indeed the life of a 14-year old boy stricken with infantile paralysis, rose to the occasion with requisite inventive genius, is told by Dr. D. B. Moss, Chief Medical Officer of the railroad.

With the problem of transporting the young patient from Minneapolis to Warm Springs, Ga., the boy's parents came to the management of the Burlington, knowing well that the electrical current in railway trains was unsuitable to operate the Drinker respirator which must be ready for use whenever the paralyzed and weakened muscles of respiration become fatigued and unable to function (approximately eight hours out of every 24 hours to insure the patient's comfort).

Railroad electrical experts went to work quickly; installed in the train's baggage car a rotary converter which altered the 32-volt direct current to 110-volt alternating current required to operate the respirator; physicians examined and tested the apparatus and pronounced it satisfactory; a railway baggage car was made to do hospital duty; the Burlington delivered the car to the Illinois Central at Chicago for through movement to Warm Springs with the respirator functioning perfectly, and the boy having its benefit at intervals during the entire journey.

Medical men believe this to be the first such case on record.

Burlington railroaders put it down as one more item in the long list of unusual things that are all in the day's work.

IMPROVEMENT IN THE NATION'S HEALTH

Surgeon General Hugh S. Cumming in the annual report of the Public Health Service states that recent experiments which furnish effective weapons in the war on disease are freezing of plague bacilli, taking mosquitoes for fact-finding airplane rides and taking notes on the whole life of a typhus-carrying flea. He confirms the report of the Metropolitan Life Insurance Company in that the rate for tuberculosis has shown a marked decrease in the last ten years. Smallpox also has, in the last few years, declined in numbers as shown by the proportion of 24.4 cases per 100,000 population which is the lowest incidence since 1916. As against these gains there has been a slightly higher diphtheria rate in 1931 as well as a slight increase in the incidence of typhoid fever. However, health conditions as a whole, as shown by mortality rates, were said to have been maintained at a very high level during the past two and a half years in spite of unfavorable economic conditions. In speaking of quarantine administration he stated that due to careful inspection no instance of the importation from abroad of any quarantinable disease has been noted.

MORE MEDICAL CARE OBTAINED BY WORKERS THROUGH SYSTEM OF GROUP PURCHASE, SURVEY SHOWS

Washington, D.C.—That economies have been effected through a group-purchase system of medical care in a typical American industrial community of 10,000—Roanoke Rapids—was disclosed in a report made public recently by the Committee on the Costs of Medical Care. Those participating in the system received a much larger volume of medical service than they could afford through the conventional fee-for-service form of payment, the survey showed.

The report of the survey of "A Community Medical Service Organized Under Industrial Auspices in Roanoke Rapids, North Carolina," by I. S. Falk,

Ph.D., Don M. Griswold, M.D., and Hazel I. Spicer, published by the University of Chicago Press, is the twentieth study completed by the Committee on the Costs of Medical Care which on November 29 of this year made public its final report with recommendations based on its five-year study of the problem of "providing adequate, scientific medical care to all the people, rich and poor, at a cost which can be reasonably met by them".

The report describes the organized medical service in Roanoke Rapids which furnishes medical care to two population groups of approximately the same size: One group through a plan involving fixed periodic payments, by the participants; the second group, through the conventional fee-for-service system of payment.

29 PER CENT SAVING EFFECTED

Small fixed periodic payments, supplemented by funds from employers which pay the salaries of physicians and visiting nurses, have enabled the first group, mill workers and their dependents, with an average income of $1,274 per family, to obtain more medical service than is ordinarily obtained by families with incomes of $10,000 and over, according to the report.

Through economies resulting from this group-purchase plan, the report brings out, the participating mill workers and their families received medical service worth $129,889, based on prevailing local rates, at an actual cost of $92,083, a saving of 29 per cent. This computation is based on figures for 1930, the year studied by the authors of the report.

During the year of the survey, the salaries of five physicians and three visiting nurses were paid by the employers, and each of the workers participating in the plan contributed 25 cents per week, which was deducted from their wages. Through the payments from these two sources, the workers and their families were entitled to medical attention at the doctors' offices or at home, to ward accommodations in the local hospital for such periods as might be necessary, and to the services of the visiting nurses, who provided both nursing care and health instruction.

The group of the population not participating in this system of group-purchase of medical care was served by the same practitioners and the same hospital, but paid for whatever services they obtained on an individual fee basis.

COMPARISON OF SERVICES RECEIVED

A comparison of the medical care received by these two groups reveals the following significant facts, according to the report:

1. Those eligible to medical care under the group-purchase plan received a far greater volume of medical service than did those who paid for their medical care individually. Families eligible under the group-purchase plan used the local hospital five times as frequently as those in the non-participating group; received four times the number of office treatments; three and a half times the number of home treatments; and the benefits of the services of the visiting nurses, who were scarcely called upon by the non-participating group.

2. Among the non-participating group, the costs of medical care to the individual varied enormously, while among those benefiting from the group-purchase system the costs were evenly distributed. Two per cent of the non-participating families paid nearly 40 per cent of the total cost of illness in their entire group, while a small number of families, comprising less than five per cent of the group were forced to bear approximately 68 per cent of the total burden of medical costs for their group.

PHYSICIANS WELL PAID

Although the services are rendered at low cost, physicians were well compensated. The net incomes of the Roanoke Rapids physicians averaged $8,409 for the year of the study, compared with net incomes of $5,400 to $6,300 for physicians in cities of similar size in other parts of the United States.

MEDICAL CARE OF GOOD QUALITY

The medical care furnished by the Roanoke Rapids medical service was, according to the authors' estimation, of high quality. Their conclusions are based on the following facts:

1. Medical care in that community was highly regarded by the population served and by physicians in the surrounding territory.

2. Death rates and sickness rates were low as compared with similar southern mill cities.

3. Favorable personal observations on the part of both the field workers who made the survey and the medical and surgical authorities consulted. "The desirable personal relation between physician and patient has been scrupulously and completely sustained," the report states.

The authors point out, however, that certain inadequacies existed in the Roanoke Rapids medical organization. They consider that the absence of dental care and the fact that the dispensing of drugs and medicines is not included in the scope of the system are serious shortcomings. Also, they point out that the development of the system was hampered by the financial limitations of the community.

COSTS UNUSUALLY LOW

Under the organized service, the per unit cost for the service was comparatively low for both the participants in the group-purchase plan and the non-participating group. In 1930, the average cost of providing for a patient in the hospital was $2.92 per day. The cost of the average ambulatory illness, including the physician's service, was $1.11 and the cost for a visiting nurse's home call was $0.86.

These low costs are attributed by the authors to the following factors:

1. The hospital facilities were not in excess of local needs. This is shown by the fact that during 1930, the local institution operated at an average

occupancy of 74 per cent, while the average occupancy rate in other general hospitals of comparable size was only 61 per cent.

2. The location of the physicians' offices in the hospital building effected economies in overhead expenses by the common use of building, auxiliary equipment and assistant personnel for both in- and out-patients and permitted the physicians to serve all patients with a minimum loss of time in travel. Thus overhead expenses were 18 per cent instead of the 40 per cent ordinarily consumed by professional expenses in private practice.

3. Provision had been made that physicians were occupied to reasonable capacity so that the medical personnel was able to serve at least twice as many and perhaps three or four times as many patients as they would serve if practicing in the customary individual manner. Patients had been educated and had become accustomed to receiving service at prescribed hours.

THE DIMINISHING MORTALITY FROM TUBERCULOSIS

According to the *Statistical Bulletin of the Metropolitan Life Insurance Company* for November, 1932, the death rate from tuberculosis has fallen from 64.6 per 1,000 in 1920 to 42.5 per 1,000 in 1930. Thereby a diminution of twenty-two deaths per 1,000 has taken place during these ten years. One important fact relating to these statistics is that, among white males, the probability of ultimately dying rises to a maximum at age fifteen; among white females maximum probability is at ten years of age. The question has been freely discussed as to whether tuberculosis should be regarded as typically a disease of early life. The statistics seem to show that the predominance of tuberculosis in the younger ages is much moderated. For instance in 1930, the probability at age fifteen of ultimately dying from tuberculosis was 45.2 for white males and a considerably smaller figure at age fifty. The contrast was greater in 1920, for we see that at age fifteen the probability of ultimately dying was 70.9 per 1,000, whereas at age fifty it was 36.1 per thousand. The situation among white females is essentially similar in this respect.

THE PROSPECT OF MORE RADIUM

The report has been made public that the Department of Mines of Ottawa has developed a distinctive formula for the extraction of radium from the Great Bear Lake pitchblende ores. More than a year has been spent upon experimental research work with the result that there will probably be a greater percentage of recovery of radium under this formula than by any other process. The operations are less complicated than previous methods and a shorter time will be required in the extraction of the mineral. It is expected that this new process will permit Canada to meet all its domestic radium requirements and also to enter the export market. A refinery has been established at Port Hope, Ontario. Hitherto there has been considerable doubt as to the possibility of reducing the price of radium. This report indicates that it may be very much less expensive in the future.

TUBERCULOSIS ABSTRACTS

BY THE NATIONAL TUBERCULOSIS ASSOCIATION

DECEMBER, 1932

TUBERCULOSIS OF THE BONES AND JOINTS IN CHILDREN

OCCURRENCE

The belief that the occurrence of bone and joint tuberculosis has dropped to a negligible point is untrue, therefore misleading and dangerous. At Springfield Lake during the past ten years four per cent of adult patients and five per cent of the 1,220 children admitted showed tuberculosis of bone and joints. The increase in tuberculin testing of cattle, together with higher standards of living, has not sufficed to eliminate the disease.

The death rate has dropped, to be sure, concomitantly with that from pulmonary tuberculosis. This is attributable, in large part perhaps, to earlier diagnosis and better treatment. City clinics, however, continue to carry the same or even a greater number of cases than formerly. These show the disease predominantly prevalent in children, 87 per cent in 5,461 cases at the Hospital for Ruptured and Crippled in New York.

ETIOLOGY

The disease is metastatic, is frequently blood borne and is often associated with other manifest tuberculous lesions in various parts of the body. Dr. Hyde found an average of 2.6 such lesions per patient. The treatment of these cases should, therefore, be recognized as a medical as well as an orthopedic problem.

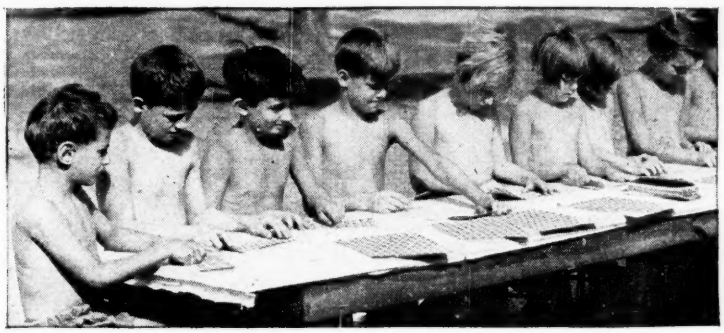
Localization of the disease in bone is favored by injury and by disturbances in nutrition. The injury itself in many cases may be slight, but 27 per cent of the cases gave a history of recent trauma, and, in a number, bacterial proof of disease was made within four or five weeks of such history. The vascular metaphysical zone of the growing bone of children is a frequent site of this localization. In the group of cases discussed about half were children under treatment for tuberculous lymph nodes and the other half adults under treatment for pleurisy or pulmonary tuberculosis. Pott's disease is the commonest form of the infection in children under six, with the hip and knee showing greater frequency in older childhood, while tuberculosis of the upper extremity occurs more often in adults.

DIAGNOSIS

A successful outcome depends as in pulmonary tuberculosis on early diagnosis. This is difficult. The tuberculin test is of value only when negative. The x-ray does not reveal early lesions especially

in the partially calcified bones of young children. The subcutaneous tuberculin test to stir up local reaction is dangerous and not to be approved. Biopsy is advocated by Hibbs and others, but this procedure may be misleading since it requires the highest diagnostic judgment and should only be used when surgeons and pathologists of long training and experience can coöperate in its performance.

Diagnosis must, therefore, depend largely on a history of previous contact or evidence of existing infection elsewhere in the body together with careful physical examination. Fluctuating swellings should not be opened though they may be aspirated with a fine needle for diagnostic purposes. In speaking of tuberculous abscess Calot says, "In closed tuberculosis cure is certain. To open it or allow it to open is to open a door by which death too often will enter." By means of smears, implantation on various media and guinea-pig inoculation, tubercle bacilli were found in aspirated material from 27 per cent of the present series.



Supervised heliotherapy in extra-pulmonary tuberculosis.

TREATMENT

Duration of treatment averaged 5.2 years. This fact emphasizes the essential importance of combined medical and orthopedic care for cases of bone and joint tuberculosis.

Conservative treatment by means of rest, diet, fresh air and sunshine is the method of choice for children. Surgery may be needed even in the younger cases but is a more important ally in handling the disease in older children and adults.

Immobilizing the affected joint in the position of election is the first and most important step. In advanced cases with contracture deformities splinting may be done without immediate correction, relying on later surgical treatment when the disease has reached a period of quiescence.

Heliotherapy is recognized as a treatment of greatest value. Orthopedic appliances should be arranged so as to permit sun treatment when possible. Adequate doses of unfiltered sunlight furnish the ideal method of light therapy and have demonstrated their superiority over artificial substitutes. Only when sunlight is not available should the latter be employed. The effect of solar light is especially marked on tuberculous abscesses, exudates, sinuses and fistulae. Its judicious use in such cases often yields gratifying results; unwisely applied it may aggravate existing conditions. Especially in hot weather the penetrating red rays of the sun may be a source of danger. Rollier encourages his discharged convalescents to continue a life of heliotherapy.

When treatment is instituted early the disease may be arrested with, at times, complete restoration of joint function. In more advanced cases with extensive destruction of tissue, rest will give subsidence of symptoms but with deformity or limited motion. In the latter case recrudescence is common. In both instances resort to surgical interference is frequently indicated.

SURGICAL TREATMENT

Forcible correction of deformities should never be attempted. Gradual reduction under splinting and traction is at times successful. Operation should be undertaken only after all acute symptoms have subsided and when the x-ray indicates that the disease is inactive. Surgery does not cure tuberculosis of joints. Its dual rôle is in the correction of deformities and in the immobilization of joints by creating ankylosis in the position of election. When possible it should be deferred until the second decade of life or until bony development is nearly complete to avoid interruption of growth so far as possible.

If after healing some motion remains in a weight-bearing joint, ankylosis is often desirable to avoid the danger of recrudescence of the disease. Especially is this true in the spinal cases, and ready recourse to the Hibbs or bonegraft method of operation is desirable. Stabilizing operations on the hip joint are also frequently indicated, and the knee and ankle require similar treatment, perhaps with somewhat less regularity. Complete immobilization must be secured even though a second operation is required to accomplish this result. While Rollier advocates great operative conservatism and prefers to advise sheltered employment, it is generally felt that an ankylosed joint gives better assurance against relapse and is economically wiser in that

it allows a safer return to ordinary conditions of life and employment.

CONVALESCENT CARE

Convalescence is prolonged, often extending over a number of years. For this reason it is well to stress once more the importance of combined medical and orthopedic care. Supervision of splints, massage, exercise and gradual weight bearing require expert orthopedic guidance.

Medical care includes the prolonged and intensive use of rest, diet, fresh air and light therapy indicated in all cases of tuberculosis, whatever organ of the body may be involved.

Tuberculosis of the Bones and Joints in Children, Clarence L. Hyde, Am. Rev. of Tuberc., November 1932.

THE IMPORTANCE OF FIRST AID TREATMENT IN FRACTURES

Dr. William Darrach of Columbia University expressed the opinion that the proper first aid treatment of fractures is of greatest importance. This he stated in an address before an assembly of the Post Graduate Medical Association in Indianapolis. He stressed the importance of general appreciation of the value of first aid treatment by those present at the time of any accident which might result in a fracture. The difficulty at the present time is that when children are injured, before ascertaining whether a fracture has been produced, the patient is handled without any regard to the possibility of the great harm which may come from penetration of the tissues by the broken bones. In the various ways by which people are instructed to care for emergencies it would be exceedingly well if more attention were paid to a general understanding of the first aid treatment of fractures. This need will probably be met in New England if the suggestions of Dr. Charles L. Scudder are put into effect by the several medical societies.

CORRESPONDENCE

A QUESTION OF HOSPITAL ADMINISTRATION

Editor, *New England Journal of Medicine*,

One of our local philanthropists delivered an address several weeks ago at the Connecticut State Medical Society and recommended that a prearranged standard fee based on mortality and health figures be established as the cost of caring for a family during the year. He said, "We already know that group medical care offers a superior service at a radically reduced cost. Today the lack of adequate medical care for everyone is one of the greatest losses the country must meet each year."

This individual predicted that the future would see national organizations of guilds and associations which would provide the average man with expert diagnosis and the best preventive and curative medical advice and care at a price within his means. He asserted that, while the science of medicine has progressed at a rapid pace, the application of business principles by the medical profession is still in the ox-cart age. The last statement is quite true because if physicians as a class were just as good business men as they are able physicians, many would be able to make enough to live and not merely to exist.

Is this philanthropist satisfied that all physicians have opportunities open to them which relate to their bread and water? I doubt whether he is acquainted with the so-called "red tape" of our hospitals. Why can't all physicians have the privilege of sending their patients to any hospital and taking care of them while at the hospital? Is it fair to have all hospitals, except those privately owned, closed to all except those individuals who are on the official staff or the courtesy list? Many a patient has requested to be sent to a certain hospital and desired to be taken care of by his own physician and, on account of the closed hospital staffs, such a request could not be granted and the patient was taken elsewhere. The patient gets just as good care elsewhere as though admitted to the hospital of his first choice. This hospital matter should be improved in order to permit any duly graduated and licensed physician to have the opportunity of sending his patients to any hospital and being allowed to treat them.

Today the hospital is so inextricably interwoven with medical practice that an institutional connection is an absolute necessity to the doctor. Physicians and hospitals stand in definite need of each other. While the latter could not exist without the former, it is no less true that the physician without institutional affiliations is impotent in many circumstances. Healing is so complex today that few practitioners could assemble out of their own resources the diagnostic and therapeutic facilities which are available to the staff of a modern hospital. It would be to the advantage of the community if every doctor were associated in some capacity with an accredited hospital. This does not mean that all qualifying standards should be abolished. Unethical and hopelessly incompetent practitioners (of whom it may definitely be stated there are but few) would be rejected outright. Those with the desire and capacity to learn, but with limited experience, would be required to work under the observation of more practiced men.

Our postgraduate courses are not sufficient. The classes are limited and not all duly graduated and licensed physicians are admitted. We have many able physicians who are seeking postgraduate courses, but they can't get them here in Boston. A physician who is good enough to hold a license to practice medicine and surgery should be equally good to be accepted for postgraduate courses, but I am sorry to state, that discrimination does exist. The poor and lonesome individual usually is the sufferer, but the wealthy one, and he who has affiliations, can and always will get anything and everything which he seeks.

The method of accomplishing such a sweeping reform as opening the hospitals for all qualified physicians must vary with the purpose and nature of the individual institution; but there is no insuperable obstacle. It is entirely possible to open the hospitals to the rank and file of the profession under suitable regulations without sacrificing the quality of the service rendered to the public. In the long run such a course, by placing the weaker men under the guidance of the stronger, would materially elevate the average level of medical care.

Now going back to consider what that great local philanthropist has said in substance, namely, prophesying "State Medicine." State Medicine is not the worst thing. Many in the profession are not haunted by the spectre of State Medicine. The very small minority in our midst that is reaping a rich financial harvest entertains pessimistic views when State Medicine is mentioned because they maintain that initiative would be throttled, our liberties curtailed, and our income reduced to the point incompatible with a decent standard of living.

I maintain that the long tedious years of waiting, with their uncertainties and dangers to which so many beginners are exposed, will be eliminated and all classes of our population will be able to avail themselves of needed medical or surgical attention now denied to so very many. The initiation of such a new order, namely, "State Medicine" will bring about more speedily than would otherwise be possible, the realization that after all the general practitioner constitutes the backbone of the medical profession and it will permit him to assume his rightful place among his confreres.

We have in our midst many who are holding the best positions, not because they are the best qualified, but on account of their political or other associations. The medical profession as a whole is the most charitable of any, poorly paid, and least appreciated by many people. Unless conditions as a whole change, the sooner we have "State Medicine" the better we will like it.

BERNARD ZUCKERMAN, M.D.,
1011A Blue Hill Avenue,
Dorchester, Mass.

December 13, 1932.

RAW VERSUS HEATED MILK

November 22, 1932.

My Dear Doctor:

Referring to the editorial "Raw Versus Heated Milk," *Journal* of November 10, p. 849, it is a résumé of an article in *Archives of Ophthalmology* by Arnold Knapp, eminent ophthalmologist of New York. Eyes seem to be more susceptible to lack of vitamins than other external organs.

Yours truly,
W. H. MERRILL.

EDITORIAL NOTE: Our comment was based on the report of the United States Public Health Service of September 23, 1932, which contains conclusions of the Office of Milk Investigation of the Public Health Service in coöperation with the State Department of Health. It may be that their studies were inspired by the report referred to by our correspondent.

A CALL FOR ACTION

December 6, 1932.

Managing Editor,
New England Journal of Medicine,

I am taking the liberty to write to you about a matter of the greatest importance to the medical profession. It is true that at the present time we are still in the throes of the worst panic that has struck this country in recent years, and that naturally, the medical profession like all others is suffering from this condition. The physician in particular has been undergoing severe experiences along certain lines, and in my opinion is suffering more today than any other profession. I have seen and heard of many medical men driving taxicabs in New York in order to earn a living, and have heard of medical men applying to welfare organizations for aid, and doing other things that I do not wish to mention. When a class of independent men and women are brought to such a state, it is absolutely necessary that something be started to improve conditions and to avoid, if possible, repetition of this kind in the future.

The depression is not entirely to blame for this condition. It is likewise true that the people throughout this great country are enjoying better health today than ever before. A number of undercurrent factors have been causing trouble to physicians during the past few years. Among them are organizations which have been competing with private practice and by which the physician has been the sufferer. An excess of free Hospitals and Day and Night Dispensaries, Clinics, State Health Clinics, and Health Units exist. Doctors have not been paid, in many instances, for tort work, when the attorney holds the check for months and sometimes forever without notifying the physician of the settlement of the claim, or when the attorney settles the claim and turns the money over to the patient to pay the doctor and the patient forgets or doesn't pay the doctor; for the doctor does not know that the case has been settled. Likewise, the bad habits which the doctor himself has created in the minds of his patients respecting payment whenever they feel like it, so that the doctor's charge has become a bill to be paid the last. I could go on and name many other factors that have caused great harm to our profession.

It seems to me that this is as good a time as any to build a definite foundation for the future. The Oath of Hippocrates is most certainly an excellent doctrine and should always be lived up to by all physicians. Yet when patients can afford to pay for services that have been rendered by a doctor, who gets up at all times of the night and gives up pleasure at a moment's notice, who worries and

loses sleep about the health of his patient, and who really earns his fee at times with undue energy, something must be done to make sure that such patients, able to pay (doctors are always willing to do charity work), should pay.

I do not believe that physicians should organize themselves into unions or otherwise, but there can and should be some definite plan that will take care of and protect the most wonderful, the most noble, and the most humane profession in existence. I hope, that you, Mr. Editor, will feel as I do about this matter, and I shall be very much pleased to discuss these things with you, at your convenience, so that you will do all you can to bring about some definite foundation for the benefit of the medical men.

Conditions in this world are changing rapidly, and I believe that our conditions with our overhead and expenses have also changed. I do not believe that we can prevent the medical schools from graduating doctors, but something must be done to help our profession to earn an honest living.

Sincerely yours,

H. M. LANDESMAN, M.D.

RECENT DEATHS

BRIGGS—FREDERIC MELANCTHON BRIGGS, M.D., of Pocasset, Mass., died in Boston, Mass., on December 18, 1932.

Dr. Briggs was born in Brookline, Mass., on November 23, 1857 and practiced surgery in Boston for many years after graduating from the Harvard University Medical School in 1883. He engaged in postgraduate studies in Vienna for a year. He served the Tufts College Medical School as Professor of Clinical Surgery and on his retirement was made Professor of Surgery Emeritus. He was Consulting Surgeon to the Boston Dispensary for many years.

His medical affiliations were many. He joined the Massachusetts Medical Society in 1883 and kept in active touch with this body until he resigned in 1930.

He was also a member of the American Medical Association, the Boston Society for Medical Improvement, the Boston Medical Library Association, the Massachusetts Medical Benevolent Society and several social organizations.

Dr. Briggs is survived by his widow, Mrs. Grace Stickney Briggs, and a brother, Richard Briggs.

DONOGHUE — DANIEL FRANCIS DONOGHUE, M.D., died in Holyoke, December 23, 1932.

He was born in Chelsea, Mass., in 1856, graduated in medicine from the Albany Medical College in 1880 and joined the Massachusetts Medical Society in 1885. He retired in 1925.

Dr. Donoghue was regarded as the dean of the local medical profession. He had endeared himself to a very large clientele.

He was keenly interested in music, sang in Catholic choirs and was president of the Shubert Club.

OBITUARY

RESOLUTIONS ON THE DEATH OF DR. PIERCE P. McGANN

Whereas Almighty God in His Infinite Wisdom has taken from our midst, our esteemed associate, Dr. Pierce P. McGann.

And Whereas: by this bereavement, St. Elizabeth's Hospital has suffered a great loss in the untimely death of a valuable member of the Staff.

And Whereas: The Staff, with great sorrow, mourn the departure of our beloved co-worker and will miss his gentle and kindly nature, with his outpouring of knowledge from which we all had benefit.

Be it resolved that the Staff of St. Elizabeth's Hospital express to his family our full recognition of his merit and our sense of loss and personal grief at his departure from our midst.

Be it further resolved that there be inscribed in our records our high sense of his value as a man and a physician, and our appreciation of his intellectual and professional attainments and our greater appreciation of his constant generous effort for the benefit of mankind.

Be it resolved that a copy of these resolutions be presented to his family as an expression of the grief which is in our hearts, but with the knowledge that God has taken him to His great reward for a life well spent.

Committee for the Staff.
GEORGE A. KEENAN, M.D.,
CHARLES J. KICKHAM, M.D.,
JOHN F. CASEY, M.D.

December 8, 1932.

NOTICES

HARVARD UNIVERSITY

FREE PUBLIC LECTURES ON MEDICAL SUBJECTS

The Faculty of Medicine of Harvard University offers a course of free public lectures on medical subjects, to be given at the Medical School, Longwood Avenue, Boston, on Sunday afternoons, beginning January 8 and ending March 26, 1933. The lectures will begin at four o'clock and the doors will be closed at five minutes past the hour. No tickets are required.

SUNDAY AFTERNOONS AT FOUR O'CLOCK

January 8—Mr. N. W. Fradd: Balancing Your Health Budget.

January 15—Dr. W. B. Castle: Anemia.

January 22—Dr. G. H. Bigelow: The Depression and Health.

January 29—Dr. W. B. Lancaster: Sparing the Eyes.

February 5—Dr. G. P. Grabfield: Rheumatism.

February 12—Dr. G. H. Wright: Color Changes in the Mouth and Teeth: an Aid in Diagnosis of Systemic Disease.

February 19—Dr. W. H. Robey: Let the Head Govern the Heart.

February 26—Dr. H. R. Viets: Nerve, Nerves, and Nervousness.

March 5—Dr. E. L. Oliver: The Care of the Skin and Scalp.

March 12—Dr. Shields Warren: Cancer and Radiation Therapy.

March 19—Dr. Randall Clifford: The Tuberculosis Problem Today.

March 26—Dr. W. G. Smillie: A Discussion of the Common Cold.

DR. PINCOFFS BECOMES THE EDITOR OF *ANNALS OF INTERNAL MEDICINE*, THE OFFICIAL JOURNAL OF THE AMERICAN COLLEGE OF PHYSICIANS

We announce herewith that Dr. Maurice C. Pincoffs, University Hospital, Lombard and Greene Streets, Baltimore, Maryland, becomes Editor of the *Annals of Internal Medicine*, beginning with the February, 1933, issue.

Respectfully yours,

E. R. Loveland, *Executive Secretary.*

CLINICS IN MEDICINE AT PETER BENT BRIGHAM HOSPITAL

On Thursdays at 3:30 P. M. in the Amphitheatre of the Peter Bent Brigham Hospital Dr. Henry A. Christian, Hersey Professor of the Theory and Practice of Physic, Harvard, and Physician-in-Chief, Peter Bent Brigham Hospital, will give a series of clinics which members of the medical profession are cordially invited to attend. The next clinic will be given on January 5.

Physicians and medical students are also invited to attend ward rounds of the Medical Staff of the Peter Bent Brigham Hospital held from 10-12 o'clock on Saturdays, as well as a clinical-pathological demonstration immediately following these rounds.

CHANGE OF OFFICE

Dr. Richard F. O'Neil announces the removal of his office to 379 Beacon Street, Boston, on January 1, 1933.

REPORTS AND NOTICES OF MEETINGS

GREATER BOSTON MEDICAL SOCIETY

The Greater Boston Medical Society met at the Beth Israel Hospital amphitheater on Tuesday evening, December 6, and heard Dr. J. H. Means speak on "Products of a Thyroid Clinic." Dr. William Dameshek introduced the speaker, and led the discussion which followed.

Dr. Means prefaced his remarks by recalling the gradual growth of the metabolism laboratory at the Massachusetts General Hospital from a small room, where the entire morning was consumed in running one basal metabolism test, to the present facilities which can accommodate 25 patients in the same length of time. At present the thyroid clinic personnel includes investigators and medical and surgical consultants. The facts presented constitute a cross-section of the work done by these various men.

The first study mentioned was the clinical assay, in patients with myxedema, of a thyroxin preparation made by Salter in London while working in the laboratory of Harrington, who, with Barger, was the first to synthesize thyroxin. Salter has likened the molecules of the thyroid colloid or iodothyroglobulin to a freight train in which most of the cars represent amino acid radicals, but interspersed among these there are, occasionally, iodine bearing radicals of two sorts — thyroxin radicals and diiodotyrosin radicals. The substance under investigation contained thyroxin radicals attached to a few amino acid radicals, in other words it was a thyroxin polypeptide. Pure thyroxin contains 60 per cent of iodine, the polypeptide 50 per cent by weight.

Experiments were conducted to determine the relative calorigenetic properties of these substances. They were used on patients with full-blown myxedema, and the rise in basal metabolic rate taken as a direct index of their physiologic potency. The work was necessarily slow because a new patient was required for each assay.

One milligram of polypeptide daily was administered orally. The basal metabolic rate was found to rise steadily to the normal level, and the curves of individual patients proved to be quite similar. Polypeptide given intravenously had much the same effect as that given orally in the same amounts, indicating that this substance is as potent by one route as by another. Single large doses (13 milligrams) of polypeptide were given intravenously and orally, and here again the metabolic curves were very similar, showing a sudden rise.

Iodine equivalents of polypeptide and thyroxin were now given intravenously to compare the response to these two substances. Thirteen milligrams of polypeptide is the iodine equivalent of 10 milligrams of thyroxin, and the two gave nearly identical curves of calorigenetic response.

Thyroxin differs from polypeptide in that it is difficult to obtain uniform results when it is administered orally. Thyroid gland on the other hand can be given only by mouth. Polypeptide, which is equally effective by either route, gives a means of comparing the calorigenetic activity of thyroid gland with that of pure thyroxin.

Dried thyroid gland contains diiodotyrosin, which is physiologically inert, and thyroxin, which is active. It was desired to know whether thyroid preparations show an activity proportional solely to their thyroxin iodine or to their total iodine. Iodine equivalents of polypeptide and Armour's dried gland were given to patients with myxedema and the gland found to have a uniformly greater calorigenetic action than polypeptide. The thyroxin

value of the gland administered was determined and again the response was greater than could be accounted for by this substance alone. In other words, dried thyroid's calorigenetic potency depends on its total rather than on its thyroxin content. In view of the inertness of diiodotyrosin, this is a paradoxical situation.

Dr. Means next spoke of myxedema. It is a pity to err in the diagnosis of this disease, because it can be cured. One of the diseases with which it is sometimes confused is pernicious anemia. Anemia, glossitis, achylia gastrica and paresthesias are found in both conditions. There have been five cases with both diseases at the Massachusetts General Hospital Clinic. In the light of this it is well to study the basal metabolic rate in pernicious anemia and the blood picture in myxedema.

The anemia in myxedema is usually of the hypochronic type. It clears up with thyroid but often responds very slowly. Iron is useful in hastening its recovery.

The heart is always enlarged to some degree in myxedema. The degree of enlargement is dependent on the duration of the disease, and all chambers are effected. Thyroid shrinks the heart to its normal size, unless some heart disease is present, in which case the heart returns to the size dictated by the disease. The electrocardiogram usually shows a flat T wave and low potential in myxedema, and these also return to normal with thyroid therapy. X-ray films were shown of the heart of a boy suffering from adolescent myxedema. It was markedly enlarged and shrank to normal in the course of a few days under thyroid administration. Interestingly enough, males have a slower rate of beard growth when myxedematous, and this boy has grown a beard since he began taking thyroid.

Angina pectoris can be produced in myxedematous patients by giving thyroid. This is particularly true in the elderly arteriosclerotic patients.

The objective of treatment in myxedema should be to free the patients of symptoms with the smallest possible dose of thyroid.

We commonly think of the patient with myxedema as being stupid, sluggish and slow. It is possible to have a distinctly irritable psyche in this disease, and also to produce a psychosis through the administration of thyroid.

Medication with morphine should be carefully guarded in myxedema in that the patients are overresponsive to the action of this drug. The hyperthyroid patients on the other hand have an increased tolerance for morphine.

The speaker next presented a classification of goiter. A goiter is any enlargement of the thyroid gland and as such may be, (1) colloid, (2) parenchymatous hyperplasia, (3) neoplastic, (4) inflammatory. Any type may be nodular or diffuse. When confronted with a goiter the physician should ask three questions: (1) Is this patient thyrotoxic? (2) Is the goiter producing pressure? (3) Is it malignant? The answers to the first two questions are quite simple, but malignancy is difficult to diagnose.

Dr. Means read a case history illustrating that stony hardness is not always a guide to malignancy. A 55 year old female patient had had enlargement of her thyroid for five years. She had signs of myxedema, and a stony hard nodule in her thyroid gland giving her pressure symptoms. The pathological slides showed this to be a thyroiditis and not a malignancy. It is of interest that malignancy seldom causes sufficient destruction of thyroid tissue to produce myxedema, while thyroiditis often does so.

In acute thyroiditis the application of an ice collar to the local swelling and general medical care will bring about a subsidence of the infectious process as illustrated by another case history presented.

Clinicians and investigators have been greatly interested in explaining the mechanism of exophthalmic goiter. Cannon produced an analogous condition in animals by anastomosing the phrenic nerve to the sympathetic chain in the neck. Recently anterior pituitary extract when given to male ducks has produced goiter, exophthalmos, a gland low in iodine content, elevated basal metabolic rates and moulting so characteristic of birds that have an excess of thyroid. When the thyroid gland is removed before administering the pituitary extract, nothing happens.

Hertz and Lerman have demonstrated that there is a 12-13 per cent monocytosis, leukopenia and relative lymphocytosis with a reduction of polymorphonuclear cells in hyperthyroidism. With iodine the white cell picture returns to normal. They feel that the reticulo-endothelial system is hyperirritable in this disease and is somehow blocked by iodine.

Dr. Samuel A. Gargill opened the discussion, and spoke of cardiac manifestations in hyperthyroidism as being a direct function of the increased metabolic rate rather than of a toxic effect upon the heart. Dr. Means in commenting upon thyroid heart disease later stated that this occurs in patients who have had heart disease and then have hyperthyroidism grafted upon this condition. Oftentimes the onset of thyroid activity is the straw that breaks physiologic compensation. In cases of fibrillation, weakness and failure of the heart may be produced through exhaustion.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

The Essex South District Medical Society held its regular meeting and dinner at Beverly Hospital, December 7, 1932.

The following clinical program was presented:

5:00 P.M.

1. Dr. Guy Randall and Dr. William Hayes: Cerebral tumor (left).

2. Dr. A. E. Parkhurst: Hemolytic jaundice (splenectomy). Brief talk on "Serum Treatment of Type I Pneumonia."

3. Dr. P. P. Johnson and Dr. C. H. Phillips: Interesting clinical cases.

4. Dr. H. Tolman: Glossitis of Tongue and Edema of Brain.

The speaker of the evening was Dr. Robert B. Greenough, of Boston, who addressed the society on "Postgraduate Instruction."

Dr. Greenough represented a committee of the Council of the parent society and presented in outline several tentative programs of postgraduate instruction assuring the members of the deep interest of the Council in the matter and expressing his personal opinion that the parent society would be willing to go as far as to make some appropriation to further the effort if the interest of the district societies proved to be sufficiently profound and widespread.

The discussion from the floor appeared to endorse the plan in principle, but no definite action was taken.

A letter was read by the secretary inviting the attention of the society to the report of the Committee on the Costs of Medical Care and asking an early consideration of this subject. No one having yet read the report in its entirety, a comprehensive discussion was at this time impossible.

Adjourned at 9:30 P.M.

WM. T. HOPKINS, M.D., *Reporter.*

NEW ENGLAND OBSTETRICAL AND GYNECOLOGICAL SOCIETY

On Wednesday evening, November 30, 1932, the New England Obstetrical and Gynecological Society held its stated dinner at the University Club of Boston. Dr. Edward Sumner Brackett of Providence, R. I., introduced the speaker, Dr. Barton Cooke Hirst of Philadelphia.

Dr. Hirst introduced the subject of the progress in gynecology by a plea for reform in its nomenclature: Not allowing the gynecic surgeon or the gynecopathist to appropriate the word gynecology to describe his work when the real meaning of the term is the study of everything pertaining to women, including reproduction, which is the most important part of the subject; and further to find a better word to describe the latter instead of the absurd obstetrics, accouchement, Geburtshülfe, and midwifery which have lost their meaning. He suggested "gennematology," which describes what the modern science really is, a study of everything pertaining to reproduction.

Dr. Hirst outlined some of the changes that have taken place in the practice of obstetrics since he first began his medical work. It was the year he graduated from the Medical School, 1883, that antisepsis was first introduced in obstetrics in America by Dr. Garrigues of New York, exciting the ridicule of most of his colleagues. This was 40 years after the classical paper by Oliver Wendell Holmes on the contagiousness of puerperal fever, nearly forty years since Semmelweiss's demonstration in Vienna and 20 years since Lister's attention was called to Pasteur's work on fermentation and putrefaction.

Caesarean sections were done during the first five years of his practice by transfixing the cervix with two skewers, tying a rubber tube beneath them and amputating everything above this line, until Baer of Philadelphia learned the technique of dropping the cervical stump, purely by accident, when he amputated the uterus so low that the cervix could not be brought to protrude through the abdominal wound.

It was 52 years ago that Dr. Hirst witnessed a surgical operation for the first time. The surgeon was one of the old type, the patient a burly Negro. The incision ran from one side of the patient's neck to the other. The bleeding was profuse and when the surgeon was not using the knife he held it between his teeth, so that he, too, was smeared with blood. Dr. Hirst, on the first row of the clinic benches, became nauseated, faint and being unable to walk, crawled up the steps on his hands and knees and collapsed outside the door.

When the speaker was an interne under Dr. John Ashhurst he noticed that every operative field he touched became infected. He removed a wen from the scalp and the patient died of sepsis. Asking Professor Ashhurst if he were to blame, he was told that he had no more control over these infections than he had over the next thunderstorm that burst upon the city. These infections came from the air. When Listerism was first introduced in the University Hospital, attention was concentrated on the air surrounding the operative field. Abdominal section was always ended by squeezing the air out of the abdominal cavity. The carbolic spray was the most important feature of the operative technique. After a morning in the operating room the assistant facing the spray would retire at night with smoky urine and mild carbolic acid poisoning.

The speaker said he would not like to be regarded as capable only of reminiscence. Speaking of recent advances in obstetrics, Dr. Hirst mentioned the use of follicular hormone in sensitizing the uterus to the action of the pituitary hormone that causes contractions. He has made a practical application of this bit of laboratory investigation and found it of considerable value.

Recently several investigators have noted that x-ray films of the sella turcica give a clue to what may be the duration of the oncoming labor. When the posterior portion of the sella is small, a prolonged labor is to be expected; when it is large a short or even a precipitate labor is likely. The roentgenologist of the graduate hospital can usually predict the sex of the child before birth by the differences in the centers of ossification in the male and female.

To prevent infection during labor, greater attention might be paid to the birth canal. In Philadelphia, a spring wire speculum is used. This distends the rugae of the vagina and enables a spray to disinfect the mucous membrane.

Hospitalization of the patient is especially im-

portant for the reduction of morbidity and mortality in obstetrics. In former days only paupers or the illegitimately pregnant went to hospitals. In Philadelphia today more than two-thirds of the obstetric cases are treated in hospitals, and there is a hospital capacity for 36,000 annually, or more than all the births in the city. On first sight the mortality statistics are apparently contradictory of the idea that improved results must be expected from increasing hospitalization of maternity cases, for it appears that the maternal mortality has a higher percentage in hospitals than in home deliveries, but evidently the deaths in hospital practice are contributed, to a considerable extent, by desperate cases transported from private homes or by cases which threaten to be complicated and are referred to hospitals on that account.

THE AMERICAN SOCIETY FOR THE STUDY OF ARTHRITIS

A joint meeting of the American Society for the Study of Arthritis and the Staff of the Massachusetts Memorial Hospitals was held on Friday evening, December 2, 1932, at 8 P.M. Dr. Alonzo G. Howard presided.

Dr. Reginald Burbank of New York presented the first paper of the evening dealing with "Arthritis from the Standpoint of the Patient." The speaker began by stating his was a plea for adequate treatment of the patient rather than the "riding of a hobby" which made all cases conform to the pet theory of the doctor. He felt that if all workers in the field of arthritis could coördinate and correlate their findings, more favorable results could be obtained, as a standardized or routine form of treatment is impossible in this disease. If we assume that the streptococcus is the main etiological factor—the veritable sine qua non—of arthritis, what can be done to check the process and prevent the patient from becoming a cripple?

In discussing the particular factors that influence the course of the disease, he stressed glandular dyscrasias, but felt that the glandular imbalance was produced by the infection causing the arthritis and not in itself an etiological factor. Pregnancy often relieves arthritic symptoms markedly, probably because of the endocrine hyperfunction during that period, while the arthritis coming on at the menopause seems to be due to the hypofunction of the ductless glands.

When increased calcium excretion is found, cod liver oil, high calcium diet, sunshine and occasionally parathormone are found valuable.

Anemia is a common complication. In arthritis experimentally produced in animals, the hematopoietic cells of the bone marrow are decreased because of interference in the peripheral circulation. There may also be destruction of red blood cells due to the hemolyzing action of the infecting streptococcus.

The most common secondary focus of infection is the intestinal tract. The mannite fermenting streptococci found there, when injected into animals, can produce typical arthritis. Irritation of the intestinal wall must be avoided as bacteria can easily enter the circulation through a permeable mucous membrane. Gall bladder and liver involvement are frequent in arthritic patients, probably because of portal metastasis from infection of the intestinal wall. Cholagogues, implantation of lactic acid bacilli and colonic irrigations are frequently beneficial.

Diet is probably never a direct causative factor in arthritis. The needs of the patient should be considered after analysis of the urine and feces. A blood chemistry may also be advisable. When, for instance, excess meat fibres are found in the stools, there is either a relative achlorhydria or a too liberal meat intake, the correction consequently should be either to limit the meat intake or give dilute hydrochloric acid.

Foci of infection should be removed, but not before the patient has been prepared for the operation by building up his general strength. Indiscriminate removal of foci of infection before such preparation may lead to serious exacerbations of the disease.

Dr. Burbank spoke of the various immunological methods as being paths to the top of a mountain that crossed one another but if carefully followed could lead to the summit of accomplishment. He is definitely against the haphazard use of vaccines. Patients lacking in complement should not be treated with any form of vaccine therapy. Various methods of inoculation may have to be tried, certain cases tolerating intradermal better than intramuscular injections. Frequently a filtrate is of value. Each case must be treated as an individual, since no standardized routine as to dosage can be applied. Repeated small transfusions may be necessary to restore resistance to depleted individuals.

In discussing non-specific protein therapy, Dr. Burbank stated that if no immediate favorable response was obtained, such cases become extremely resistant to treatment.

It is necessary for the doctor to be optimistic and keep the patient from becoming melancholy over his condition.

Joints should not be exercised to the point of producing pain.

Summing up, Dr. Burbank stated that the doctor must regard the arthritic as a complex problem; that the immunological treatment must be adjusted to each individual case; foci of infection sought for and removed; diet regulated and the gastro-intestinal tract treated according to the needs of the particular patient. He stressed the fact that arthritis was a systemic disease, not a disease of the joints alone, and advised all who wish to obtain satisfactory results to make every effort to keep the patient in the best possible physical condition.

Slides were shown of cases that had severe infective arthritis and that showed remarkable results under vaccine therapy.

ESSEX NORTH DISTRICT MEDICAL SOCIETY

The ninety-second Semi-Annual Meeting of the Essex North District Medical Society will be held January 4, 1933, at 12:30 P.M., in the Haverhill Girls' Club Banquet Hall, 36 Main Street, Haverhill (over Colonial Market). Phone 241.

The Final Report of the Committee on the Costs of Medical Care, after a five-year study—perhaps the most important project in our generation so far as medical practice is concerned—was released to the public recently and will be discussed at this meeting. It may, directly or indirectly, initiate economic and social changes revolutionizing our system.

There are two definitely opposing views embodied in the Majority and Minority reports. The A. M. A. backs the *Minority*. Every New England Physician associated with the Committee favors the *Majority* report.

We must inform ourselves so that we may decide with reason instead of emotion where we stand.

Dr. Richard M. Smith, Professor of Pediatrics at Harvard, a member of the Committee on the Costs of Medical Care, will lead the discussion favoring the *Majority* report at about 2 P.M.

Read the *A. M. A. Journal* of December 3, 1932.

Read the *New England Journal of Medicine* of December 1, 1932 and weekly thereafter.

Get as much information on the subject as you can. The report of the Committee, "Medical Care for the American People," is now available and every doctor should read it. (About 200 pages published by the University of Chicago Press, price $1.50.)

Think about it—talk about it (after you have read it).

The medical profession needs intelligent leadership.

On Friday, January 13, 1933, Dr. Morris Fishbein, Editor of the *A. M. A. Journal* and *Hygeia*, will present the *Minority* side of the report, at the First Baptist Church (just south of Monument Square, at 215 Main Street, Haverhill.) Phone 4531.

This meeting is under the auspices of the Pentucket Association of Physicians and is open to all physicians. Dinner will be served at 8:25 P.M. (Price $1.00.) Dr. Fishbein will talk at about 9:20. Come after the dinner, if you are not able to come in time for it.

Please notify the undersigned if you plan to come to the dinner!

E. S. BAGNALL,
Secretary and Treasurer,
281 Main Street, Groveland.

OTIS P. MUDGE, *President.*

WACHUSETT MEDICAL IMPROVEMENT SOCIETY

The Wachusett Medical Improvement Society will meet at Belmont Hospital, Worcester, Mass., January 4, at 7:30 P.M. The speaker of the evening will be Dr. H. F. R. Watts of Boston. He will give a summary of his findings in interpretation of x-rays in cases of tuberculosis.

The society also hopes to have Dr. Alton S. Pope speak of the Chadwick plan of treatment of tuberculosis.

R. J. NORTHBRIDGE, M.D., *Secretary.*

GREATER BOSTON MEDICAL SOCIETY

A joint Meeting of the Greater Boston Medical Society and the Beth Israel Hospital will be held on Tuesday, January 3, 1933, at 8:15 P.M., at the Beth Israel Hospital.

PROGRAM

Postoperative Pulmonary Abscess, Experimental and Clinical Studies. Dr. Elliott C. Cutler, Moseley Professor of Surgery, Harvard Medical School.

Discussion: Dr. Harry Linenthal, Dr. Louis M. Freedman.

Physicians and students are cordially invited.

BERNARD I. GOLDBERG, M.D., *Secretary.*
483 Beacon Street, Boston, Mass.

SOCIETY MEETINGS
CONGRESSES AND CONFERENCES

January 3—Greater Boston Medical Society. See notice above.

January 4—Wachusett Medical Improvement Society. See notice elsewhere on this page.

January 5—Clinics in Medicine at Peter Bent Brigham Hospital. See page 1231.

January 8 - March 26—Harvard University. Free Public Lectures on Medical Subjects. See page 1230.

January 12 - May 12—The William Harvey Society. See schedule on page 765, issue of October 27.

January 19 - May 17—New England Physical Therapy Society. See schedule on page 1010, issue of December 1.

February 6-10—The American College of Physicians. See page 765, issue of October 27.

February 8 - April 5—The New England Heart Association. See page 1011, issue of December 1.

February 17 and 18—The New England Hospital Association. See notice on page 911, issue of November 17.

DISTRICT MEDICAL SOCIETIES

ESSEX NORTH DISTRICT MEDICAL SOCIETY

January 4 and 13—See notice elsewhere on this page.

May 3—Wednesday, Annual Meeting. Program to be announced.

ESSEX SOUTH DISTRICT MEDICAL SOCIETY

Tentative Program
1933

Wednesday, January 4, 1933—Danvers State Hospital, Hathorne. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. A. Warren Stearns, Dean of Tufts College Medical School.

Wednesday, February 1, 1933—Council Meeting, Boston.

Wednesday, March 8, 1933—Lynn Hospital. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Soma Weiss, Boston City Hospital. Subject: Arterial Hypertension.

Wednesday, April 5, 1933—Essex Sanatorium, Middleton. Clinic 5 P. M. Dinner 7 P. M. Speaker: Dr. Wilson G. Smillie, Professor of Public Health Administration, School of Public Health, Harvard University. Subject: Common Colds.

Thursday, May 4, 1933—Censors' Meeting, Salem Hospital, 3:30 P. M.

Tuesday, May 9, 1933—Annual Meeting. Salem Country Club, Forest Street, Peabody. Golf in afternoon; greens fee $2.00. Dinner at 7 P. M. Speaker: Dr. George Burgess Magrath. Subject to be announced later. Ladies invited.

R. E. STONE, M.D., Secretary.

FRANKLIN DISTRICT MEDICAL SOCIETY

Meetings of the Franklin District Medical Society will

be held at the Weldon in Greenfield on the second Tuesday of January, March and May.

CHARLES MOLINE, Secretary.

MIDDLESEX EAST DISTRICT MEDICAL SOCIETY

The program of the Middlesex East District Medical Society for the coming year is as follows:

January 11 at Wakefield.

March 15 at Melrose.

May, at the Meadowbrook Club, Reading.

ALLAN R. CUNNINGHAM, Secretary.

MIDDLESEX SOUTH DISTRICT MEDICAL SOCIETY

January 13—See notice on page 1123, issue of December 15.

NORFOLK DISTRICT MEDICAL SOCIETY

January 31, 1933—Roxbury Masonic Temple, 8 P. M. Subject: "Stomach Surgery"—Motion pictures. Dr. William R. Morrison.

February 28, 1933—Time and place to be announced. "The Diagnosis and Treatment of Anemia," by Dr. William P. Murphy.

March 28, 1933—Time, place and subject to be announced. Speaker will be Dr. J. P. O'Hare.

May—Annual Meeting. Time, place and subject to be announced.

FRANK S. CRUICKSHANK, M.D., Secretary.
1695 Beacon Street, Brookline.

SUFFOLK DISTRICT MEDICAL SOCIETY

Wednesdays at 8:15 P. M.

January 25, 1933—General Meeting in association with the Boston Medical Library at the Boston Medical Library. Titles and speakers to be announced later.

March 29, 1933—Clinical Program, Massachusetts General Hospital.

April 26, 1933—Annual Meeting. Election of Officers. Scientific Program—Titles and speakers to be announced later.

The Medical Profession is cordially invited to attend all of these meetings.

WILLIAM H. ROBEY, M.D., President,
LELAND S. McKITTRICK, M.D., Secretary,
HILBERT F. DAY, M.D., Boston Medical Library.

WORCESTER DISTRICT MEDICAL SOCIETY

Wednesday, January 11—Dinner and meeting at the Worcester City Hospital. Paper by Dr. Morris Fishbein, Editor of the Journal of the American Medical Association.

Wednesday, February 8—Dinner and scientific meeting at the Worcester State Hospital. Program to be announced later.

Wednesday, March 8—Dinner and scientific program at the Memorial Hospital, Worcester. Program to be announced later.

Wednesday, April 12—Dinner and scientific meeting at the Rutland State Hospital. Scientific program to be announced later.

Wednesday, May 10—The Annual Meeting. Place and program to be announced later.

ERWIN C. MILLER, Secretary.

BOOK REVIEWS

Mental Healers—Franz Anton Mesmer, Mary Baker Eddy, Sigmund Freud. By STEFAN ZWEIG. Translated by Eden and Cedar Paul. Published by the Viking Press, New York. 363 Pages. Price $3.50.

In this book, Zweig traces the development of psychotherapy as influenced by the work of its three most important prophets. His method of dealing with the work of Mesmer and of Mrs. Eddy is largely biographical; the section on Freud consists almost entirely of an exposition of the psychoanalyst's work. The author traces the growth of Freud's theories, but evidently finds much less of the spectacular in his life as compared with the careers of the other two.

Although in his introduction to the book Zweig shows what seems to us an unwarranted faith in mental healing, the values which he places upon the work of Mesmer, Mrs. Eddy and Freud are carefully weighed and appear to be soundly estimated. The book is delightfully written and seems to have lost none of its flavor in the translation. In comparatively brief compass, it acquaints the reader with the main events in the lives of the three subjects, and leaves him with a definite idea of the influence which each one exerted upon the development of psychotherapy.

The Rheumatic Infection in Childhood. By LEONARD FINDLAY. William Wood & Company, New York, 1932. 187 pages. Price $3:50.

This small monograph is a summary of the author's close observation of Rheumatic Fever and Rheumatic Heart Disease (1914 to 1930). Extensive data are given concerning a series of 701 examples of the rheumatic infection cared for at the Royal Hospital for Sick Children, Glasgow. The status of 693 of these cases was known at the time of publication, and this in itself speaks well for the care with which the problem has been studied. The scope of the report is limited to children and young adults.

An excellent historical review of the disease is given and the major factors concerning rheumatic infection are presented. As is pointed out by the author, there are but few pathological and bacteriological data included, and with our present knowledge, this must be considered a real handicap.

Perhaps the most interesting feature of the monograph is the story of the progress of the disease in this large series. Rheumatic infections have been analyzed from almost every conceivable angle, and there is perhaps some confusion due to the large volume of charts and a special abbreviated classification which renders the charts none too easy to interpret.

The volume is distinctly English, very little of the recent literature from this country having been quoted. There is, also, no effort to evaluate some of the recent etiological studies.

An Introduction to Dermatology. By RICHARD L. SUTTON and RICHARD L. SUTTON, JR. The C. V. Mosby Co., St. Louis, Mo. 1932. 541 pages. Price $5.00.

The Suttons have created a valuable small book on dermatology and syphilology particularly for students. Their larger volume has been condensed in a very satisfactory manner with some little new material added. The pictures are excellent and for the most part well chosen. Forty-two pages are devoted to syphilis and the book is very highly recommended particularly for students.